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A Case Study from West Bengal

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A Case Study from West Bengal

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ABSTRACT

In some poor parts of the world, rural areas are known as pastoral folk; for their heavily dependence on agricultural activities; and for having poor infrastructure, limited employment opportunities and low levels of income, among others. On the other hand, the few primate cities are known as the hub of non-agricultural activities, better infrastructure, better institutional environment, greater employment opportunities (for the skilled labour) and higher levels of income. To minimize this gap, urban amenities should be taken to rural areas by adopting a policy of dispersed urbanisation. For that, the whole rural area does not need to be transformed into urban area but it requires to be well connected with the nearest small urban centres which do also need to be supported with proper amenities. The higher degree of rural-urban interaction helps rural economic diversification process to set in motion and thereby develops healthy rural settings with urban ambience. This study examines these propositions, focusing on the state of West Bengal in India. The traditional sector i.e. agriculture is already burdened with over-employment in many parts of West Bengal. Rural non-farm sector as a source of generation of new employment opportunities has been conceptualized by many scholars to be of immense importance. The degree of spatial underdevelopment of a region can be captured through the movements of labour from agrarian (mainly concentrated in rural areas) to non-agrarian sectors (mainly concentrated in urban areas). Poor, less-educated, people move from agrarian sector to non-agrarian sector because of two main reasons: one, income earned through their involvement in agricultural activities is insufficient, and, two, non-farm employment is not adequately available in their own locality. Besides, a section of the unskilled rural labour force living in an agriculturally backward area, in general, out-migrates to relatively fertile agricultural areas. Thus, for balanced regional growth, we advocate for adoption of dispersed urbanization strategy. In this paper, we would like to capture the need for adopting dispersed urbanization policies through a theoretical framework and a couple of empirical models.

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CHAPTER 1

REGIONAL ECONOMIC PROBLEMS AND THE NEED FOR RURAL URBANISATION AND RURAL INDUSTRIALISATION

1.1   INTRODUCTION

The process of industrialisation involves transfer of labour and capital from agricultural sector to the industrial sector. In the process of development, labour transfer from the traditional sector to the modern sector has been emphasized by Lewis (1954). As Zhu and Song (2007) argue, this kind of labour transfer in developing countries takes place in two ways, i.e. rural industrialisation and urbanisation. According to Kant (2012: 12), urbanisation is the spatial manifestation of the shift of people from sustenance farming to manufacturing. Chapman and Wanmali (1981) have argued that successful development is correlated with an extensive and general regional urbanisation. They noted that urbanisation in India was at so low a level that it failed to diffuse a modern commercial sector in traditionally agricultural areas. In particular, they found that there were too few towns of smaller sizes to allow for the proper linkage mechanisms between the rural and urban sectors and between the farm and non-farm sectors. This hindered the process of overall regional development. The level of urbanisation in India was 27.78 per cent in 2001 whereas the average level of urbanisation in the developing countries was 40 per cent in 2001 (Bhagat, 2004).[1] In India, according to Chapman and Wanmali (1981), policy bias is evident towards strengthening some major primate cities which have emerged as the centres of introverted economic systems. In the post-Second World War period, many developing countries followed certain development strategies that tended to concentrate on public investment to promote large-scale industrialisation and large urban centres, thinking that urbanisation economies associated with sheer city size were crucial; and thus the intermediate city system suffered (Hamer 1985). In India too, this was the substance of the Nehru-Mahalanobis development strategy (Saith 1992). Rural non-

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[1] It is difficult to compare the degree of urbanisation at the international level due to the reason that definitions of urbanisation vary from one country to another. For example, municipalities, town committees and cantonment boards are defined as urban areas in Bangladesh; and, in Nepal, all localities of 9000 having more inhabitants are regarded as urban. In India, several aspects are considered in defining an area as urban. To be more specific, both "civic status" and "demographic criteria" are taken into consideration (Bhagat, 2004: 49). The Census of India considers those areas as "urban", which satisfy the following criteria: (1) All places with a municipality, corporation, cantonment board or notified town area committee etc. (2) All other places which satisfy the following criteria: (i) minimum population of 5000; (ii) at least 75 per cent of male main workers engaged in non-agricultural activities; and (iii) a density of population of at least 400 persons per sq. km. (1000 per sq. mile).

agricultural activities were often neglected in the pursuit of modernisation through large-scale industrialisation and urbanisation (Chakravarty 1987, UNDP et al. 1988). Capital-intensive, big industries have limited capacity in absorbing a large number of unskilled labour-force that is often found unemployed or underemployed in rural areas. Leidholm *et al*. (1994) have argued that rural towns help grow labour-intensive small enterprises. Moreover, rural towns appear to be important links in marketing agricultural exports from the surrounding area. Hence, different small-scale activities such as commodity processing, grading and packaging, storage, bulking, depot activities, wholesale trade, transportation activities, and some other services like maintenance, repair etc. may grow in the town to support the export marketing functions (Bendavid-Val, 1991). Thus, there is a need to adopt an alternative strategy which would aim at deconcentration of urban growth or dispersed urbanisation.

1.2   TRANSFORMATION OF RURAL PROBLEM INTO URBAN PROBLEM

Several problems in urban areas can be mitigated if the rural problems are properly addressed because certain rural problems often appear to be causal factors of several urban problems. Schumacher (1973) points out that work opportunities in rural areas are so restricted that many people cannot get out of poverty. They remain as underemployed or totally unemployed. When they do find some work, their productivity is found to be extremely low. Some of the poor have land but often the size of the land is too small to improve their living conditions. Most are landless labourers and have very rare prospect of ever getting any land. There is no hope for them in the rural areas and hence they migrate to the big cities in search of employment and income (Todaro 1980). Thus, rural unemployment becomes urban unemployment.

With the increase in income level, many developing countries have been experiencing skewed urbanisation problem. Mellor (1995) has pointed out that one of the major problems of the contemporary developing countries is the unhealthy structure of urbanisation. Urban people tend to concentrate in one or a very few of the major population centres. The developed countries did not pass through same type of experiences when they were at similar stages in development. Numerous urban centres grew as urban population had started diffusing over those centres. For overall development of a region, rural-urban interaction is crucially important. Rural and urban areas are dependent on each other. Especially, urban centres assume immense importance in the process of growth of rural areas by providing various non-agricultural produces and different kinds of services. But, in this regard, one thing appears to be worrisome. If we consider two points-in-time figures, i.e. 1901 and 2001, we observe that the number of urban centres per 10 lakh rural population has declined from 8.6 in 1901 to 6 in 2001 (see Table 1.1). As indicated earlier, this is a reflection of introverted economic system.

TABLE 1.1
India: Indiacators of urbanisation

Census Year	Urban Population (in million)	% Urban Population	Decennial Growth Rate of Population (%)	Number of Towns/UA per 10 lakh Rural Population
1901	25.85	10.84	-	8.6
1911	25.94	10.29	0.35	8.0
1921	28.08	11.18	8.27	8.7
1931	33.45	11.99	19.12	8.4
1941	44.15	13.86	31.97	8.2
1951	62.44	17.29	41.42	9.5
1961	78.93	17.97	26.41	6.6
1971	109.11	19.91	38.23	5.9
1981	159.46	23.34	46.14	6.4
1991	217.17	25.72	36.10	6.0
2001	285.35	27.78	31.30	6.0

Notes: *(1) As 1981 census was not conducted in Assam, the 1981 population figures for India include interpolated figures for Assam; (2) The 1991 census was not held in Jammu & Kashmir. The 1991 population for India includes figures for Jammu and Kashmir as projected by the Standing Committee of Experts on Population Projection (October, 1989).*
Source: *Bhagat (2004);*
Original Source: *Census of India.*

1.3   MIGRATION TO KOLKATA

Since 1946, i.e. a year prior to independence, the city of Kolkata (erstwhile Calcutta) had been bearing extra population pressure due to partition of Bengal because many Hindu refugees had migrated from erstwhile East Pakistan (now Bangladesh) to West Bengal. The flow of such international migration is, albeit in slower pace, still continuing. A section of them started earning a living on the streets of Kolkata. Roy (2009) reported that a large number of refugees settled in urban areas (mainly in Kolkata and its suburbs) to engage in petty trade and cottage industry. A sample survey carried out in Kolkata points out that a considerable section (68 per cent) of the hawkers in the city happen to be people of erstwhile East Pakistani origins (Biswas, 1999).[2] Besides, share of organized sector employment has been shrinking over the years (see Table 1.2). However, there are several additional factors which contributed to the increase in number of hawkers over the time in the city of Kolkata. As Shalti Research Group (2008) has noted, the other factors include:

- Migration from the districts of West Bengal and the neighbouring states: Hawking is a source of livelihood for the low-skilled migrants seeking employment in the city;
- Closure of factories and shrinking of the organized sector: Around one-fifth of the hawkers were once permanent employees in the large factories.[3] After the factories had closed down, works in the informal sector including street vending have been the only avenues for survival for these people;
- Widespread poverty in urban areas: Although there has been a declining trend in the percentage of slum population in the Kolkata Municipal Corporation area over

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[2] Cited in Bandyopadhyay (2009).

[3] The state of West Bengal experienced prolonged economic stagnation and relative decline in industrial output in the second half of the last century. In 1960, nearly 23 per cent of India's industrial output was produced in West Bengal; it declined to about 10 per cent in 1980, and to under 7 per cent by the end of the 1980s (Sengupta and Gazdar 1996). By the end of 1997, the share had gone down to 5.1 per cent (Banerjee et al. 2002). In a similar vein, employment in the organized private sector went down from about 1.1 million to about 800,000 over the period 1980-1997.

the decades, still, according to the 2001 Census, 32.55 per cent of Kolkata population live in slums, and 30 per cent of the city population are found to fall under the below-poverty-line (BPL) category (see also Sen, 2011).[4]

In this context, Bandyopadhyay (2009: 14) argues that the city pavements have been encroached and "privatised by two different groups for two different purposes". The groups include: (a) the migrants who come from different places (from within and outside the state) and find a living, but stay on the pavements; and (b) the urban poor who commute from the suburban refugee colonies and contribute to the informal market on the pavement. It is a common phenomenon that the hawkers or the street-vendors have occupied the pavements at many places of Kolkata city. Such business activities have narrowed down space for the pedestrians. The rapid increase of vehicles on roads has also been creating problems. It is not only a problem of traffic congestion, but parking space is also a matter of concern (Shalti Research Group, 2008). The number of registered motor vehicles in West Bengal has increased from 2,366,000 in 2003 to 2,872,000 in 2006. Although the compound annual growth rate of motor vehicle registration, which is 6.67 per cent, is much lower than that of all states (which is 10.59 per cent), very limited size of road in Kolkata city (only 6 per cent of the total area) is found to be a serious concern in relation to the growth of number of vehicles in the state and/or city.[5]

TABLE 1.2
Organised sector employment (both private and public)
As a percentage of main workers and total workers

	1991			2001		
	Male	**Female**	**Total**	**Male**	**Female**	**Total**
Organized sector employment as a percentage of main workers	10.9	6.3	9.9	10.0	7.1	9.3
Organized sector employment as a percentage of total workers (main + marginal)	10.8	4.5	9.0	8.8	4.1	7.4

Source: *Census of India (for population data); Economic Survey 2001-02, Government of India (for employment data)*

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[4] The 2001 Census reports a total population of 4,580,544 in Kolkata with a slum population of 1,490,811 (see also Sharma, 2010).

[5] See http://mospi.nic.in/Mospi_New/upload/Infra_stat_2010/1.ch_road.pdf (a Government of India website) for more relevant data.

TABLE 1.3
Residents of slums and squatter settlements as a percentage of
urban population, by region and city

Region/City	Slum dwellers as percentage of city population
Latin America	
Bogotá, Colombia	60
Mexico city, Mexico	46
Caracas, Venezuela	42
Middle East and Africa	
Addis Ababa, Ethiopia	79
Casablanca, Morocco	70
Ankara, Turkey	60
Cairo, Egypt	60
Kinshasa, Zaire	60
Asia	
Kolkata, India	67
Manila, Philippines	35
Seoul, South Korea	29
Jakarta, Indonesia	26

Source: *Population Crisis Committee (1983), World Population Growth and Global Security, Report No.13. Washington, DC: Population Crisis Committee; Page 2.*

The establishment of manufacturing industry, particularly jute, in the suburbia of Kolkata in about the middle of the nineteenth century led to rapid population growth in the city and its surrounding areas. The early immigrants from Bihar, Uttar Pradesh, Orissa and other parts of Bengal were mostly landless labourers who came to the city in search of employment (Roy, 2009). As far as migration from rural Bengal to Kolkata is concerned, poor household members, mainly from erstwhile Midnapore district, were found to migrate to Kolkata permanently, some seasonally. The migrants included the poorer section of the population in the district. They were mainly found to work as domestic servants. *"The very low wages of these domestic servants have made it possible for even the lower middle class families to have at least part-time help"* (Dasgupta, 1988: 145). Their presence was also reflected through some additional slum settlement patterns in some areas of the city of Kolkata (see Table 1.3, although little outdated, for a general overview about the proportions of slum dwellers in some cities). Kundu (2003) also observed that families from other districts of West Bengal and neighbouring states migrated to Kolkata city in search of livelihood and then started living in slums.

The new unskilled migrants in the city (who came from villages) unable to accommodate themselves in formal employment usually opt for informal activities since entry is not restricted by the administration and nor is it contingent upon higher level of endowments -- either skill or large amount of capital.[6] Increases in the share of informal sector in total employment in some selected cities of South Asia over the decades have been shown in Table 1.4. It would not be true to say that there have been no legal attempts to restrict the informal activities in Kolkata. Hawking or street vending in

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[6] Informal sector is considered to be consisting of very small units involved in production/delivery of a variety of goods and services by independent/self-employed entrepreneurs. To carry out such activities, the entrepreneurs sometimes engage their family member/s or a few hired labourers. The range of services in this segment consists of rag (or other recyclable items) picking, hawking and vending, intermediate transport such as cart pulling and peddling, low cost catering services, repair and maintenance services, extending casual labour, among others. Besides, a major area of informal sector exists in the form of shelter development and illegally operating industrial enterprises over largely low grade urban land or premises within low income settlements (Ansari, 2009).

Kolkata is forbidden under the provisions of the Calcutta Municipal Corporation Act of 1980. In 1997, the act was amended to include, "any basket, receptacle or goods on pavement, street, park or garden for display or sale" (Bhowmik, undated). But, as Ronita Bardhan *et al*. (2011) argue, the uniqueness of the city of Kolkata lies in its politics of urbanisation. According to them, urban politics of extremes started emerging together. On the one hand, the government continued to patronize the slum dwellers and informal economic activities to ensure their "vote bank", while, on the other, it adopted neoliberal policies of urbanisation in order to quickly achieve higher growth and thus started promoting new cities on the fringes of the old city. We will come to this discussion later again.

TABLE 1.4
Share of Informal Sector in Total Employment: Selected Cities of South Asia

City	Share of Informal Sector in Total Employment			
	1960s	**1970s**	**1980s**	**1990s**
Dhaka	-	57.0	64.6	-
Kolkata	-	40-50	54.0	-
Mumbai	35.0	49.5	60.0	65.0
Chennai	-	50-70	60.0	-
Delhi	-	53.8	-	-
Karachi	-	69.1	-	-

Source: Amin, 2002:32; Sethuraman, 1992, p.10

TABLE 1.5
Population size and Growth Rate of Mega Cities in South Asia, 1995-2015

Mega City	Population (Million)					
	Estimates and projections			Annual growth rate		
	1995	**2005**	**2015**	**1990-1995**	**2000-2005**	**2010-2015**
Dhaka	8.2	12.4	16.8	4.6	4.0	2.8
Mumbai	14.1	18.2	21.9	2.7	2.5	1.8
Kolkata	11.9	14.3	17.0	1.8	1.8	1.8
Delhi	10.1	15.1	18.6	4.1	3.8	1.8
Karachi	8.5	11.6	15.2	3.4	2.9	2.7

Source: UN-Habitat, 2007, pp.385-389

1.4   EXPANSION OF LARGE AGGLOMERATION

Apart from the push factors, the pull factors have also been found to be effective. Dasgupta (1988: 145) noted that "it was not necessarily the poor or the disadvantaged in the village who migrated." The educationally advanced and economically better-off sections of the rural population had been traditionally seen to be migrating to Kolkata. To combat the urban population growth, two new townships have been established -- Salt Lake City and Rajarhat New Town. The first private house had been built in Salt Lake City in 1970, whereas, by 1990, some 175,000 inhabitants were found to be living in the newly urbanized area (Chatterjea, 1990). This new city was established to accommodate housing needs of the middle income groups, but it has become "a fancy neighbourhood" of old, congested, Kolkata. This planned city has been very attractive to the upper as well as upper-middle income groups. More than two decades back Chatterjea (1990: 180) felt: "More such developments are urgently needed to ease the relentless pressure on Calcutta's housing and business space -- and the only practicable locations within striking

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distance of the inner city are to the east." After the process of economic liberalization and reform has started taking place since 1991, "[f]reeing the market from the state's regulative framework in order to facilitate private investment in urban infrastructure" has become a central component of an emerging urban strategy in India (Chen *et al*., 2009: 437). Besides, due to high congestion and overcrowding, the population growth has remained almost stagnant in last decade in the core city area, i.e. Kolkata Municipal Corporation area (see Table 1.5). Consequently, there has been a natural growth of population in the peripheries and outer areas. Since 1990s, Rajarhat New Town has been developed on the fringes of the core urban area as a planned "growth magnet" which would, as has been conceived, "reduce density in the city core, as more and more middle- and upper-middle-class families aspire to a changing and more suburban lifestyle" (Chen *et al*., 2009: 445). Joint venture companies are involved in the project through the public-private partnership model. They have been engaged in building "the housing stock and other infrastructure" whereas the state government has been responsible for "land acquisition, development and sale" (pp. 442-3). This new aspect of growth process has been well-conceptualised by Chen *et al*. (2009: 445):

> *Many local, regional, and city-level governments in the developing world are creating new urban spaces through the production of new integrated townships, on the fringes of existing large urban centers, as another common form of globalizing the local [elite economy]. These supposedly self-sufficient new towns dotting the reconstituted urban landscape manifest the current urban development strategies of attracting capital investment. Images of such new towns show very little difference in the actual built environment of these cities that are marked by gated high-rise developments, expensive shopping malls and entertainment complexes, convention centers, high-tech business and institutional districts, and state-of-the-art infrastructure such as roads, dedicated power lines, and water supply, which set them apart from the existing, older larger urban centers.*
> *……….*
> *The new townships being built on the peripheries of existing cities are being financed through private developers—local, national, and international --- while the acquisition and development of large tracts of land continue to be a state-regulated process bringing in new social and economic contestations.*

1.5   THE RISE OF SERVICE SECTOR AND RURAL EMPLOYMENT OPPORTUNITIES

As far as contribution to Indian economic growth is concerned, recent data suggests structural shift towards the service sector. India and West Bengal cases are presented in Table 1.6. At the national level, share of agriculture in GDP has been consistently declining over the years, whereas the share of service sector has been experiencing an upward trend. In 2000s, the industrial sector has experienced fluctuating trends. If we consider three-points-in-time figures, i.e. 1991-92, 2001-02 and 2011-12 (period after liberalisation started), industrial share at national level is seen to be stuck at around 23 per cent. In West Bengal, due to high growth in agriculture in late 1980s, the share of the primary sector in the state's total income experienced a rise (see 1991-92 figure in Table 6). But, the share showed falling trends later on. The share of industry has been falling consistently, whereas the share of service sector has been witnessing consistent increase. Furthermore, within the service sector, although trade, real estate, banking and insurance, transport, etc. have been contributing significantly, communication services (which

include telecommunication and software services) have also been seen to be rapidly occupying an important position from its export perspective. So, on the one hand, promotion of megacities is often conceived as a relatively easy means to enhance GDP growth through the development of the real estate sector and several other allied activities, while, on the other, growth in software services is understood to have facilitated the growth process of urban income. Growth in software services constitutes nearly 50 per cent of India's exports of services (Banga and Kumar, 2011). Considering the growth-enhancing role of the software industry within service sector, as Chen et al. argue, the growing and specialized needs of this sector has been given due importance at the time of developing Rajarhat township. However, this sector not only needs a very specialized kind of skilled manpower, but its labour absorption capacity is also very limited. The links between the growth of these industries and the prospects of other economic activities located in lower hierarchies ranging from city-peripheries to the remote areas have not yet been properly established.

TABLE 1.6
**Changes in sectoral shares in gross domestic product of India and in
gross state-level domestic product of West Bengal**

Year	India			West Bengal		
	Agriculture and allied activities	Industry and allied activities	Services	Agriculture and allied activities	Industry and allied activities	Services
1961-1962*	42.8	18.9	38.3	41.8	24.7	33.5
1971-1972*	41.4	20.2	38.4	44.8	23.0	32.2
1981-1982	36.8	22.6	40.6	31.4	28.7	40.0
1991-1992	31.9	23.0	45.1	35.9	23.4	40.7
1996-1997	29.4	24.5	46.1	34.9	21.3	43.8
2001-2002	25.2	23.0	51.8	30.4	19.5	50.1
2006-2007	21.0	26.1	52.9	24.0	20.4	55.6
2011-2012	19.9	23.8	56.3	23.9	17.3	58.8

*Source: (1) Economic Survey 2011-12, Government of India; Website of Ministry of Statistics and Programme Implementation, Government of India; (2) *India Database, The Economy (Vol. I), H.L. Chandhok and The Policy Group (1990).*

There was an expectation that the new communication-cum-information technology will connect the other areas and these will reduce city's older hierarchy of centrality and spatial inequalities. But that did not happen. "There is little doubt that connecting to global circuits [through new communication-cum-information technology] has brought with it a significant level of development of expanded central urban areas and metropolitan grids of business nodes, and considerable economic dynamism. But the question of inequality has not been engaged" (Sassen, 2005: 37-8). The "cities that are strategic sites in the global economy tend, in part, to disconnect from their region" (p. 38). However, it may not be frustrating to think that the cities that have been developed as "strategic sites" to connect the "global" trade centres or global economy would fail to connect their local region. The strategic city approach has been adopted primarily to foster growth. What does growth economics have to do with poor economics? Although some may find certain links between them through trickle-down effects, seeking answer to this question has already generated huge debate in different spheres of academia and policy-making forums. Interestingly, Krishna (2012) reports about certain trickle-down effects. A business process outsourcing (BPO) company, namely RuralShores, has

opened some 10 centres in the smaller towns of different states of India and is currently planning to open more. This has created some job opportunities for the rural educated/skilled youths in their own surroundings and thus helped in ceasing out-migration. According to Krishna's projection, if "500 of India's 700 districts get a rural BPO centre with 500-1000 seats" each then about one million direct jobs (in two shifts) will be created, with many more indirect ones. These activities may be termed as rural enterprises (for definitional clarity related to rural enterprises, see Dutta 2002), but India needs to create employment opportunities at much bigger scale for its unskilled rural poor. Moreover, prospect of such industry is largely dependent on foreign market (although they have some clients in domestic market). According to Kant (2012), India must build a labour-intensive manufacturing sector in order to promote inclusive growth.

For many policy-makers, growth economics is the top most priority. It is worth-mentioning here that some 30 per cent of India's population live in urban areas and Indian cities contribute over 55 percent to the country's GDP (India Urban Poverty Report, 2009).[7] So, increase in economic growth seems to be contingent upon promotion of agglomeration or expanded megacities and, thus, city-based service industries. It is evident from Table 1.7 that the largest share of employment in big cities in India is attributed to service (tertiary) sector. Thus, it is imperative to note that megacity-based development policy may often identify the growth process with increasing "inequality" and with disconnection "from their region", especially the rural region.

TABLE 1.7
**Percentage Share of Employment in a Class-1 City such as
Kolkata for Major Sectors**

	Male			Female			Person		
	Primary	**Secondary**	**Tertiary**	**Primary**	**Secondary**	**Tertiary**	**Primary**	**Secondary**	**Tertiary**
Kolkata	0.6	33.7	65.6	2.0	23.7	74.2	0.9	32	67.2
All class-1 cities	1.5	37.5	61	3.8	32.5	63.6	1.9	36.5	61.6

Source: *Adecco-TISS (2009), p. 119;*
Original source: *National Sample Survey Organisation (61st round), Government of India.*

1.6   OBJECTIVE OF THE PRESENT STUDY

Rural to rural migration can be mitigated through proper strategies of decentralized urbanisation. People may migrate from one rural region to other rural region when there are very limited employment opportunities in the former as compared to the latter or due to wage differentials across rural regions. Poverty or unemployment has often been found to be responsible for seasonal or permanent rural-to-rural migration.

Given the low levels of agricultural productivity and few employment opportunities in the rural sector, it is not surprising that many people were compelled to migrate seasonally in order to earn a living. Food and cash earned would be used for immediate requirements. The situation demands that there is a need to generate employment opportunities in the rural sector.

For the generation of employment and income opportunities in the rural areas, diversified occupations through rural industrialisation are to be provided in those areas.

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[7] Cited in Chen *et al.* (2009).

Our basic proposition is that this could be achieved by way of creating small urban pockets in the rural areas (which we termed as dispersed urbanisation). Once this could be done successfully then the chronic problems like poverty and unemployment could be eradicated from the grassroot and that in turn through the process of rural urban continuum would enhance social welfare of both the rural and urban sectors.

The organization of the study is as follows. We discuss the process of rural-urban continuum in Chapter 2. The conventional regional development framework and a suitable alternative framework emphasizing dispersed urbanisation and development of rural non-farm sector have been presented in Chapter 3. In Chapter 4, with the help of available data, we have discussed labour movements and occupational diversities. Two empirical models, emphasizing dispersed urbanisation and rural industrialisation respectively, have been presented in Chapter 5. The report concludes with Chapter 6.

CHAPTER 2

RURAL-URBAN CONTINUUM: UNDERSTANDING THE PROCESSES

2.1 INTRODUCTION

During the past decades the growth of urban areas in both the developed and developing countries becomes one of the important characteristics of spatial development. Urbanisation is a process to accomplish the art of advance state of human civilization and therefore it is not only refers to change in land use, but also accompany socio-economic changes which may or may not be apparent as physical changes in the built-up area. The concepts of the dynamics of urban development or the theories of the cycle of urbanisation, sub-urbanisation and counter-urbanisation (Antrop, 2004, Champion, 2001) failed to explain fully the rural-urban development that is occurring today. Again, lives and livelihoods are being profoundly changed and ever changing as process of globalization, marketisation and market integration. As a result, the old concepts of peasants are becoming post-peasants, livelihoods are becoming increasing delocalized and deagrarianization is replacing the familiar process of agrarian transition. It is therefore becomes indispensible for the developmental policy makers to analyse the process of urbanisation along a rural-urban continuum, based on a broad range of indicators. In this respect the concepts such as functional urban area (Nordregio, 2005), polycentric urban areas (Bailey & Turok, 2001) or the understanding of the current status of the rural-urban relationship (e.g CURS, 2005), i.e. changing pattern and tendencies of the rural-urban continuum in different areas, are of much helpful towards formulation plans and policies.

The development economists considered urbanisation as an indicator of both economic development and a higher state of social welfare. Therefore, their development endeavors, in both the developing and underdeveloped countries are becoming typically urban biased. One should, however, bear in mind that the process of urbanisation which leads to unequal distribution of income and wealth between rural and urban people not only weaken the process of urbanisation but also leads to a state of unsustainable development of the economy as a whole. Both the sectors are mutually dependent for their inputs towards maintaining a decent living of the inhabitants of their respective arena and such phenomenon establishes the high degree of mutual dependency and the multidimensional rural-urban linkages. Comparison of urban and rural areas implies the existence of a rural-urban continuum [Perry, 1984] although it must be mentioned that it is not a generalized one. There exists impressive evidence for the differences between the entities of 'rural' and 'urban'. If the differences are categorized into subjective and objective factors, we will notice a disparity between the rural and urban levels. The objective indicators are quality of public amenities such as – health care facilities, transport and quality of education and that of subjective ones are social indicators, representing people's own assessment of their quality of life as compared to their community at large. Rapid urbanisation is the impact of continuous rural to urban migration and its linkages [Aier and Kithan, 2011].

Agriculture has traditionally played an important role in rural areas in terms of land use, income and employment and also as a cultural carrier. Urbanisation of rural areas, i.e. providing some urban facilities in the rural areas, influences farms and agricultural production and therefore becomes an important indicator to include in the comprehensive analyses of urbanisation trends. Now, the term horticulture is used to

describe those farms which are often driven more by lifestyle performance than production needs (Robinson, 1990). In construct, more traditional and full-time farms are generally found in rural areas. Hence, for sustainable development plans and policies, the concepts of urbanisation in the rural field and the diverse characteristics of urbanisation in the urban field along with the multidimensional rural-urban linkages become necessary.

2.2   RURAL-URBAN LINKAGES

One of the basic determinants of rural-urban linkages is the rural-urban continuum. Rural-urban continuum is a process of socio-economic and cultural interaction between villages and towns or cities. In his work on Mexican peasants, Robert Redfield (1930) introduced the concept of rural-urban continuum as folk-urban continuum. He observed that as community moves from folk to the urban end of the continuum, there occurs a shift from cultural intimacy and organization towards disorganization. In general sense, the term 'continuum' refers to the gradual transition between two extremes (e.g. very rural and very urban as in our case). Hence, rural-urban continuum refers to the observed differences in terms of degree of urbanisation as one move from one extreme to the other. As a result, the concept of rural-urban linkages takes different forms in terms of flows (spatial and sectoral). In general, it refers to flow of people (migration, commuting etc.), capital and goods (trade and in-kind family support) between rural and urban areas. Along with the above flows, there are simultaneous dynamic flows of ideas, innovation and environmental impact of linkage (Munankami et al; 2005, Tacoli, 2004; Funnell, 1988). Many cultural traits, like dress pattern and new thoughts and ideologies are diffused from the cities to the rural areas. But the urban life style that gradually reaches the rural areas depends on their proximity to cities. Due to increase in transport and communication by means of improvement in road, railway and water transport facilities and via radio, television, news paper etc. the village's proximity to cities has increased significantly. Thus, while the urban socio-culture has an influence on the rural lifestyle, the converse is also true, but may be to a lesser extent. This to and fro movement of flows between two extremes affects mutually both the rural and urban culture and lifestyle (see Figure 2.1).

    Any degree of urbanisation in the rural areas, i.e. providing, to a certain extent, the urban traits and facilities in the rural areas actually reduces the differences between villages and cities. Consequently, what will happen in the long run is a lack of organization and detachment from culture and that directly reflects in the social aspect of an economy. Another important aspect of this rural-urban continuum is that we can not establish or demarcate between the line entries of rural and urban across different geo-political boundaries. There has been a growing recognition that rural and urban areas have become increasingly interconnected through a constant movement of people, goods, capital, ideas and information. As concepts, "urban" and "rural", seem to fall short to cover the complex web of flows and exchanges that have made rural and urban areas dependent on each other. [Munankami, Sacendoncillo and Sarosa (2005)]. Tacoli (1998) argues that even while we treat rural and urban areas and issues separately, multiple inter-linkages between these two areas play significant role in the process of both rural and urban changes. However, one important point to be noted here is that there are differences of definitions of the rural and the urban sectors between nations. Yet, urbanisation is accompanied with a change in employment options as well as other inputs from a predominantly agricultural-rural to a predominantly industrialized and service oriented urban sector [Mills and Becker, 1986].

FIGURE 2.1
Rural-Urban Continuum
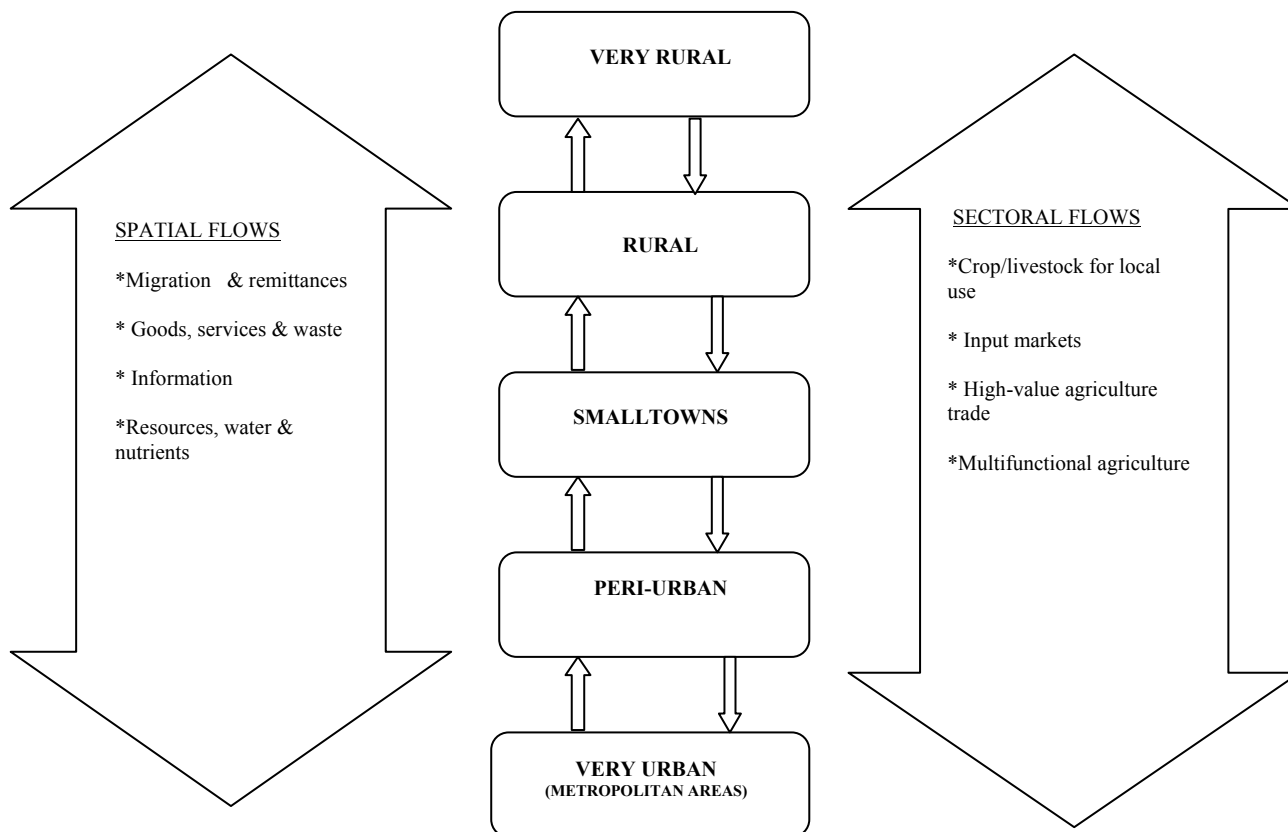
Johnston (2000 and earlier) points out a demographic, socio-economic and behavioral dimension of urbanisation and that insists to look into the multidimensional features of the rural-urban continuum. Hence, the distinction between rural and urban has also been diffuse and multifaceted (Antrop, 2004). It becomes important to note here that the continuum cannot be understood without the idea of transitional locations that exist within the urban-rural continuum. A variety of characteristic elements of different locations have been deployed to explore the diverse formations and consequences of urbanisation. Some of the most and frequently used terms of locations that are relevant to our study are presented below.

2.2.1   Urban fringe

This word suggests a topological category, not a clear cut edge, but a broader zone of an urban area. According to Hite (1998), the fringe is a frontier in space where the economic returns to land from new urban land uses are roughly equal to the returns from traditional land uses. In this sense, the fringe is the losing edge of rurality and steady moving outward into the countryside. This frontier is the ever continuing expression of global to local impacts on prices and of the relative costs of conflicting land uses and commodities.

2.2.2   Peri-urban

The countryside at the further end of the fringe front is called peri-urban (Meeus & Gulinck, 2008). The term peri-urban is frequently in use to describe urbanisation of rural areas. But, the definition differs from Europe to developing countries. As a broad based operational definition OECD (1979:9) states: The impacts of economic growth and physical expansion of the urban area are not confined within urban boundaries; they reach into much wider areas surrounding urban centres, creating so-called "rurban areas", "urban fringe areas", or "peri-urban areas". While the peri-urban area retains the characteristics of the rural area, these are subject to major modifications: changes take place with respect to physical configuration, economic activities, social relationships and so forth.

2.2.3   Rural areas

Areas away from urban influence with low population density, limited urban land use or urban status and a high degree of primary production can be termed as traditional rural areas. Many socio-economic indicators, e.g. education, income etc. are also used to categories these areas.

2.2.4   Remote rural areas

Remote rural areas represent a special sub-category of rural areas having low accessibility to economic centres. These areas are not directly influenced by urbanisation and need special development programmes for sustainable development. They are indirectly influenced by urbanisation, e.g. tourist destinations (as in Sundarban areas of West Bengal, India) or summer cottages (as in developed countries).

   The dynamics of linkages that have come into existence between urban and rural areas are assumed to have evolved from small centres that stimulated changes in agricultural regions [Friedmann and Douglass (1978); Rondinelli and Ruddle (1978)]. Ulied et al (2009-10) identified the several relationships between rural and urban section, e.g. home-work relationships, central place relationships, relationships between rural and urban enterprises, rural areas as suppliers of natural resources for urban areas etc. But, Preston (1975) clearly defines the main categories of interaction between rural and urban areas as follows:

- The transfer of people: migration (both long and short term)
- The flow of goods, services and energy
- Financial transfer through trade, taxes, state disbursements.
- The transfer of assets: property rights, allocation of state investment, capital in other forms

   However the dynamics of linkages that have come into existence between urban and rural areas are assumed to have evolve from small centers that stimulated changes in agricultural regions [(Friedman and Douglas, 1978; Rodinelli and Ruddle,(1978)].

   One of the principal mechanisms of urbanisation is migration from rural to urban areas and regions. The underlying reasons for migration to urban areas are classified into two broad based categories; Pull-based migration and Push-based migration. In both cases the underlying guiding principle is people's perceptions of differentials between urban and rural areas. The pull-based migration involves differentials being driven by real

differences in living standard, job and income opportunities and access to various services. The push-based migration, on the other, involves migration fueled by perceptions of better things to come in urban areas. Helgesson (2006) observed that vulnerability limits space for present and long period migration strategies as well as the creation of a buffer against uncertainty. For example, the living conditions for many rural and urban residents have been difficult but they are increasingly vulnerable to other influences such as drought or earth quake. Hence, aspiration and vulnerability to social, economic, political and ecological factors can be considered as factors of push-based migration.   In reality, at the macro scale, it is human values as a whole and particularly the search for human betterment become important in understanding the magnitude of migration. The movement of population at the regional level acts as part of urban expansion and this search for alternative lifestyle has been facilitated by massive investment in major highway construction and by the expansion of public transportation.

2.3   INDIAN SCENARIO WITH SPECIAL REFERENCE TO WEST BENGAL

The twenty-first century can be regarded as the century of urbanisation and it is more so for the developing countries. One very conservative demographic estimate reveals that sixty per cent of the world population will live in cities by another quarter of a century and it is argued that this urban population growth will include natural growth, migration and reclassification of former rural areas. What we are observing in and around us is that globalization and marketisation of the economy have made it possible for the city dwellers of the developing countries to consume high quality goods and services which are otherwise consumed only by the people of the developed countries. The changes in the world's economic sphere brought significant changes in the socio-cultural spheres of the developing countries and that in turn brought the obvious changes in the choice sets of the people of these countries in respect of both food and non-food items. However, the demographic characteristics prevailing in these developing countries do not match with that of the developed industrialized nations. As in due course the most needed industrialisation did not occur in the developing countries as a result these countries are burdened with an excess labour in rural areas (Bose, 1984). Again, as population has kept on increasing, the pressure on rural land has amplified leading to increased fragmentation [Harris, 1993] of holding, the greatest single detriment to agriculture in a region [Grigg, 1983; Jacoby, 1971; Pina-Cabral, 1986]. Critics claim that one of the main reasons for the fragmentation of land is due to portable inheritance that leads to an ever decreasing field size [Clout (1972); Moore (1972)]. In some regions where farmers are unable to afford tractors and other agricultural machines and are forced to depend on old, medieval field systems of cultivation which are used to adapt to smaller chunks of land [Meliczek (1973); Smith (1978)].

India also depicts the same picture as of the other developing countries. The historical fact is that a few urban centers had flourished in India from time to time but India has been predominantly rural in character through the ages. It was in the late nineteenth and the early twentieth century's that some industrial cities grew in India. Urban population of India has increased from 62.4 million in 1951 to 285.4 millions in 2001, thereby showing nearly fivefold increase in urban population. According to 2001 census, the total urban population of India is more than ten percent of total urban population of the world. From the population census 2011 data, which is recently released, it appears that Indian urban population has increased to 377.1 millions.

TABLE 2.1
Growth of Urban Population in India and West Bengal

Census Year	Total Population (millions)		Urban Population (millions)		% of urban Population	
	India	West Bengal	India	West Bengal	India	West Bengal
1951	361.09	26.30	62.44	6.28	17.30	23.90
1961	439.23	34.93	78.94	8.54	18.00	24.40
1971	548.16	44.31	109.11	10.97	19.90	24.70
1981	683.33	54.58	159.46	14.45	23.30	26.50
1991	844.32	67.98	217.18	18.62	25.70	27.48
2001	1027.02	80.22	285.35	22.49	27.78	28.03
2011	1210.19	91.35	377.10	29.13	31.16	31.89

Source: *Census of India (1951-2011)*

As compared to other developing countries, urbanisation in India is not that skewed and unbalanced. Although urbanisation in India is not characterized by any single city domination, yet wide regional variation becomes one of its important features. It is sometimes argued that migration is an inbuilt screening system which is picking up people to relatively higher economic and social strata. Rapid urbanisation attracts basically two categories of rural people to migrate in the urban centers. One category, those who are poor and unemployed or underemployed in the rural area migrates to the urban centers in search of employment and income. The other category belongs to those who migrate to urban centers, specifically cities, for higher and better education or for higher standard of living. During the last few decades the increase in business and study related mobility and decline in the share of employment searching migrants actually confirms the above proposition.

However, the pace of urbanisation does not matched with adequate housing and other basic facilities and the result is rapid proliferation of slums and slum population. In 1981 about thirty million people were living in slums which increased to about seventy five millions in 2001. In fact, this vast section of urban population is living under conditions of multiple deprivations and crime and social unrest is highest in the slum areas. Hence, the long standing presumption that large cities provide better living condition than the countryside is only true if and only if there is efficient city management and good governance. However, it remains an opportunity to labourers in backward regions to migrate into the cities or other dynamic urban centres as survival strategy or for a better livelihood.

However, the study by Kundu et al (2012) revealed that for causal workers for whom the percentage of getting regular employment after migration has increased from 16 in 1999-2000 to 25 in 2007-08. This trend might be considered as an indicator of the quality of the migrants. It also indicates that migration is not taking place only among the weakest and vulnerable section of the labour force. Therefore migration can be a climb up the income ladder for well-prepared, skill workers or it can be a simple displacement of poverty from rural to the urban environment for others.

2.4   THE CASE OF WEST BENGAL

More or less similar picture to that of all India is observed in the West Bengal Economy. West Bengal is regarded as one of the most urbanized states in India with about 32% of the population lives in the urban areas. As a matter of fact the Kolkata Urban Agglomeration now holds the highest percentage of the state's entire population, though a

decreasing trend over decades has been observed. Kolkata, Mumbai and Chennai, the port cities of India, were the most lucrative cities for trade and industry and were considered as the industrial hubs of India. This geographical advantage over the other Indian states was a crucial factor behind West Bengal's urban industrialisation till 1980s. Important traditional industries such as jute, iron and steel, engineering and coal dominated west Bengal's economy for several years. However, Sen (2009) pointed out that these traditional industries actually made a skewed industrialisation in the state which refused modernization and over time were lagging behind the performance of the other industries. As a result, a large number of factories were closing down (due to industrial sickness), industrial share decreased as well as employment in the organized sector declined steadily. The increased unemployment in the state during the late 1990s and an endemic period of industrial sickness forced people to take up jobs in the informal sector in urban areas (Sen, 2009). The informal sector covers a wide range of activities. Employment in the informal sector characterizes the presence of adaptive and labour intensive technology, small scale operation and an unregulated and competitive market. In course of time such kind of informal sector flourished in West Bengal.

Marjit et al (2007) argued that in the presence of such a flourishing informal labour market, the formal sector faced trouble. People employed in the informal sector were willing to be paid less than those employed in the formal sector and hence thereby created stiff competition for the formal sector employees. Entrepreneurs preferred to employ people from the informal sector since the benefit for the entrepreneurs were enormous, e.g. while employing labour from the informal sector they did not have to face the rigidities of the labour market, their cost of hiring employees reduced drastically, and employees could be hired for flexible time period. But this flourishing informal sector in West Bengal was going through an acute crisis to job insecurity in the labour market.

Like urban areas, the impact of globalization and marketisation has been spread in to the rural areas towards changing pattern of demand. To accommodate this changing pattern of demand (i.e. change in the choice of consumption set) in the rural regions of India, especially of West Bengal, a small urban centers has to be come up in dispersed patches – a process we refer to as dispersed urbanisation. Again, in order to satisfy the changing unfulfilled demand of the people living in the rural areas, it become imperative to create new avenues of employment generation for them either by creating some rural industries in the rural areas or in rural towns or to set up agro-industries industries through the process of agricultural diversification. Such a process of setting up of rural industries in the rural areas termed as 'rural industrialisation The process of rural urbanisation as well as rural industrialisation would not only facilitate the rural-urban linkages mechanism through rural urban continuum process, but also reduce distress driven rural to urban migration to a greater extent.

2.5   CONCLUSION

Small rural enterprises may bring in many benefits in regional development. They may encourage the entrepreneurial and technical skills of the less well-off persons. But technical skill of rural people can be augmented through setting up vocational institutes in the small urban centres or in their peripheries. Besides, consumption pattern of urban population is changing. In response, there is an inclination towards producing high value products by farmers. Such agricultural diversification would be facilitated through greater degree of rural-urban continuum and thus farmers can be benefiting out of it to a greater extent.

CHAPTER 3

REGIONAL DEVELOPMENT: AN ALTERNATIVE FRAMEWORK

3.1 INTRODUCTION

What do we mean by urbanisation? Urbanisation per se is a process by which the residents of an area are provided with non-farm employment along with urban sociopolitical and cultural milieu. Now, the fundamental question arises here is: What do we mean by "dispersed urbanisation"? There are two processes of urbanisation: i) the extension of existing urban areas and, ii) creating some small urban pockets in rural areas. The former process often takes place in developing countries without eliminating the constraints of sustainable urban growth. It actually adds additional constraints to overall urban development process by inviting rural unskilled, unemployed labour force to urban agglomeration. But, in the latter case, urbanisation is nothing but creation of some small urban pockets in the rural areas, i.e. to provide some urban amenities in the rural setting. In true sense of the term, dispersed urbanisation refers to the latter process.

Both rural and urban areas do have their own distinct problems; and the planners and policy makers have been trying to formulate development strategies in accordance with individual sector specific problems. But, since problems in urban areas are sometime considered to be an effect of the problems in rural sector, finding individual problem-specific solutions is perhaps not going to show us the right path of development. The evidence demands that the problems in both the sectors are to be tackled by an integrated approach. While the rural economy is trapped into the low level equilibrium due to uneconomic scale of production and existence of disguised unemployment, the urban economy appears to be the centre of attraction for the rural masses and thus fosters the rural-urban migration process and finally helps shifting some of the rural problems to the urban areas. This process actually accentuates the existing urban problems and leads to unsustainable urban growth. As we are experiencing that accumulation of urban problems is of two parts: one, it generates from urban areas itself, and two, a shift of rural problems to urban sector. Thus, solution of urban problems somehow needs considerable attention to rural problems.

3.2 RECENT DEVELOPMENTS

Now, it becomes imperative to understand the rural problems and the process by which it affects the existing urban problem both in micro and macro perspectives. It is evident from both national and state-level statistics in India that the sectoral shares of GDP have been experiencing significant shift from agricultural to the service sector, keeping the share of manufacturing sector more or less unchanged. But, from employment point of view, agricultural sector still remains the oasis for the majority of the labour force. This implies that the economy has not experienced any significant rectification as far as its chronic problems of rural unemployment and poverty are concerned. In agricultural sector, the age-old problems like fragmentation of land, under- or over-utilisation of soil, water, etc., have ever been persisting till today which adversely affects both agricultural production and productivity. At the same time, population pressure on rural areas has been increasing over time. The result is: Without creating more opportunities in the rural areas it intensifies the problem of unemployment and underemployment in that sector. At the same time, lack of basic rural infrastructure has failed to generate non-agricultural

work opportunities. Thus, the basic problems that persist in the agricultural sector are unemployment, underemployment and poverty.

On the other side of economy, during the last one and a half decades, India has experienced rapid income growth in some of its pockets due to the service sector boom (e.g. information technology, private health as well as education services, private transport and telecommunications, etc.). This boom is grossly urban based and has created to some extent employment and income generating opportunities in the urban formal and informal sectors of that area. Consequently, the Indian urban labour market -- both organized and unorganized -- has experienced considerable hikes in respect of wage levels in those pockets that have actually intensified the rural-urban wage differentials. It is a common phenomenon that labour force moves from low-wage sector to high-wage-sector. Thus, wage difference becomes one of the determining factors of rural-urban labour migration as well as opportunity differentials. These opportunities attract peoples, both skilled and unskilled, from inside and outside the urban areas to settle down in that urban and nearby areas. The entire phenomena have initiated another boom which has occurred in the real-estate sector. The real-estate sector has a typical characteristic of accommodating unskilled labourers many of whom come from non-urban areas as seasonal migrants. One important thing that is evident from this fact is that since the real-estate sector is growing in the urban areas the informal labourers who are engaged in this sector have an access to the urban consumer market. This accessibility has an impact on their consumption basket and most of their earnings are spent in the urban areas. In this way, they are adapting the urban lifestyle. Consequently, attraction of urban ambience among this section of seasonal migrants may lead to their strong affinity towards their permanent settlement in the urban areas and that leads to the growth of urban slums. For sustainable urbanisation as well as healthy rural life, attention needs to be paid in raising rural income level, on the one hand, and creating some urban ambience in rural setting, on the other. If rural income is generated, or present rural income level is raised, then it may be argued that a segment of that income will be spent for urban produces sold in the rural areas that will also, as expected, encourage local village production in some modified way or other.

3.3   RURAL NON-AGRICULTURE

Village production units may often find it difficult to switch to production of urban goods due to lack of many things such as resources, raw materials, technology, infrastructure, market-oriented design, packaging, etc. But there are ample opportunities for the growth of agro-based rural small enterprises in villages. The reason is as follows: (1) raw materials are locally available, (2) relatively limited resource is required, (3) indigenous technology can easily adopt modern technology (i.e. much sophisticated knowledge is not required), etc. Although agro-based industries are typically rural in nature, nearby small towns as marketing outlets are expected to facilitate promotion of the agro-based products.

3.4   THE CONCEPTUALISATION

Let us try to understand the concept of rural- urbanisation within our conceptual framework. Apart from   the standard norms of an urban-area (i.e. not in terms of land-man ratio or presence of urban amenities) we try to conceptualise the urban-area in terms of the proportion of persons engaged in agricultural and non-agricultural activities. When

the entire work force in an area is engaged in agricultural activities then the area is called a rural area. On the other hand, when all are engaged in non-agricultural activities then the area is called an urban area. Hence, urbanisation is a process of generating non-agricultural activities in an agrarian area. Thus, rural-urbanisation is actually a process of transforming the sources of livelihood to a considerable extent from agricultural activities to non-agricultural activities, along with other pre-requisites such as population size and infrastructure or urban amenities. Now, the basic question is how and where does the process start from? Does it start from occupational diversification, or from growth of infrastructure? Even if we pose this question in such a straightforward way, the answer will not be as simple as it seems to be. Actually, rural-urbanisation is a process in which occupational diversification and the development of basic infrastructure occur simultaneously and reinforce one another, leading to the availability of greater (in terms of both number and quality of various services) urban amenities in the rural areas.

At the outset, one should keep in mind that the theme of the present study is not about transforming rural areas into core urban areas. Our basic aim is to improve the rural economy, enhancing the scope of agriculture/non-agriculture linkages via rural urban continuum. The present state of agriculture is grossly nature-dependent (especially, where there is a large number of small farmers who have limited access to capital-intensive technologies) and rural livelihood is largely determined by natural factors. Agricultural output, on the one hand, is still not a deterministic one but a stochastic one due to random nature of climatic condition. On the other, the farm sector faces acute problem of accessing marketing outlets due to insufficient and inefficient linkages between production centres and market centres. The situation is further worsened due to lack of proper storage facilities for the agricultural produces. The resultant effect is huge wastage of agricultural produces, low income level persistent in the farm community, farmer's indebtedness, and higher price -- a lion's share of which is grabbed by the trading community -- of agricultural produces in the market. Thus, a weak farm economy is often responsible for inhibiting the growth of rural non-farm activities.

A virtuous set of policy approach needs to be undertaken to break the vicious rural economic circle. One of the crucial means of development, among others, is to provide rural areas with necessary infrastructure to facilitate transport and storage facilities. These infrastructural facilities play the catalytic role for the growth of both agricultural and non-agricultural activities. If we go further in detail, we would find that the mechanism would work in the following way: On the one hand, it opens market channels for the agricultural produces; and, on the other, storage of unsold agricultural produces (in the cold-storage) safeguards the farmer from the huge wastage of their produces. Linking production centres with markets by roads would help stopping, if not eradicate completely, the free play of the middleman or the like trading communities and thus farmers are expected to get better prices by directly selling their produces in the nearby towns. These infrastructural facilities also initiate the path to grow area specific agro-based industries in the rural areas and that in turn will generate employment opportunities for the rural unskilled masses. The entire process will lead to establish an efficient and sustainable demand and supply chains, not only for the rural development itself but also for the development of the urban areas. To understand and to provide with the realistic development strategies, we need a holistic approach to tackle with both rural and urban problems simultaneously, otherwise all sector specific approaches will fail to curb the problems as we are experiencing.

FIGURE 3.1
Model of Present Development Process

Rural area

II   R   I

Farm activity curve

a

b

Farm activity   N' M"   O   M   N   45⁰   Urban area

U

M

N

G

Urban Non-farm activity curve

Growth linkage curve

G'   IV

III

Non-farm activity
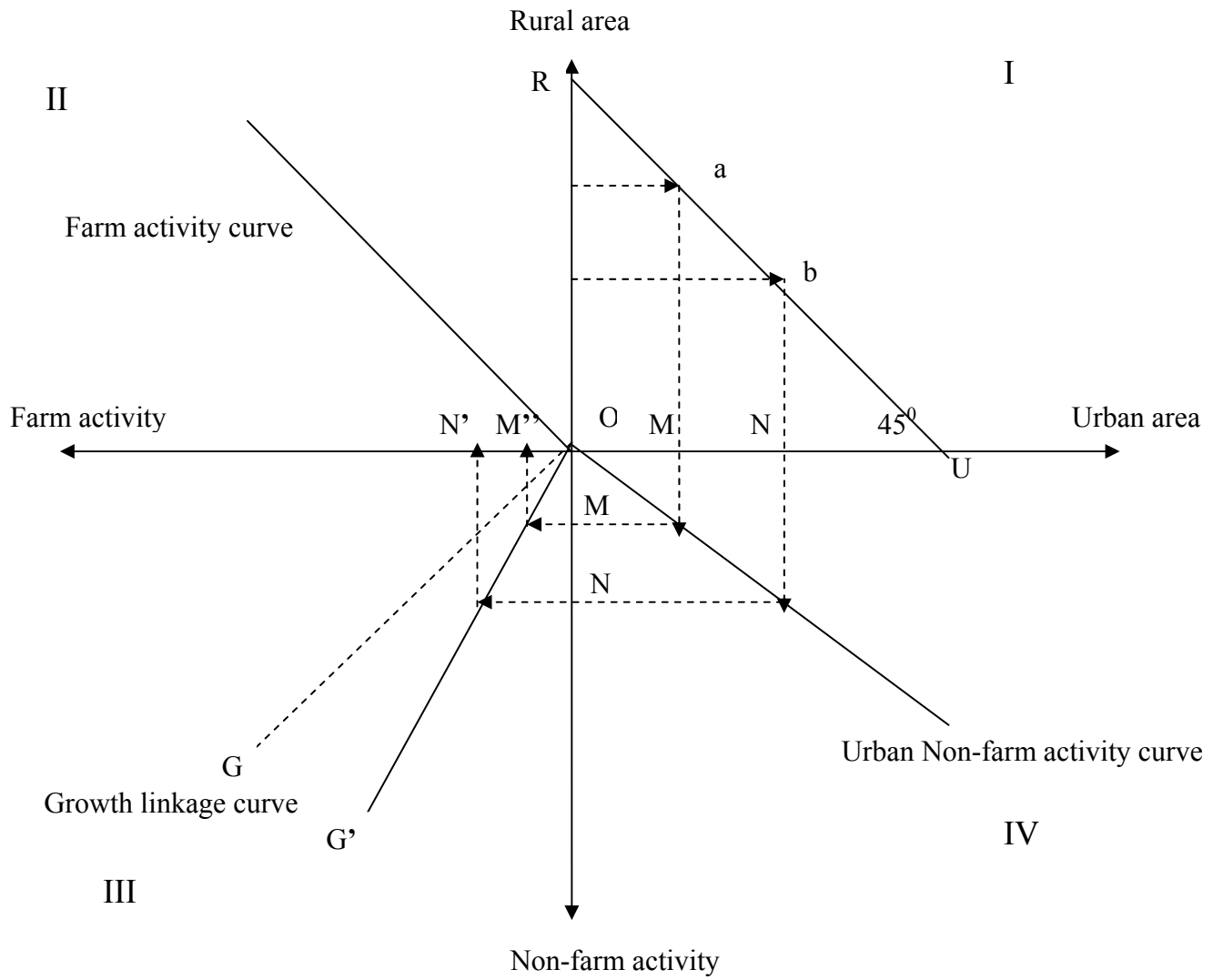
FIGURE 3.2
Alternative Rural Development Model

I

Farm activity   Rural endogenous growth linkage curve

NF*

F''   G'

F'

O

A   B   Non-farm activity

Rate of dispersed Urbanisation

II

U   Dispersed Urbanisation curve

O^I A^I B^I Non-farm activity
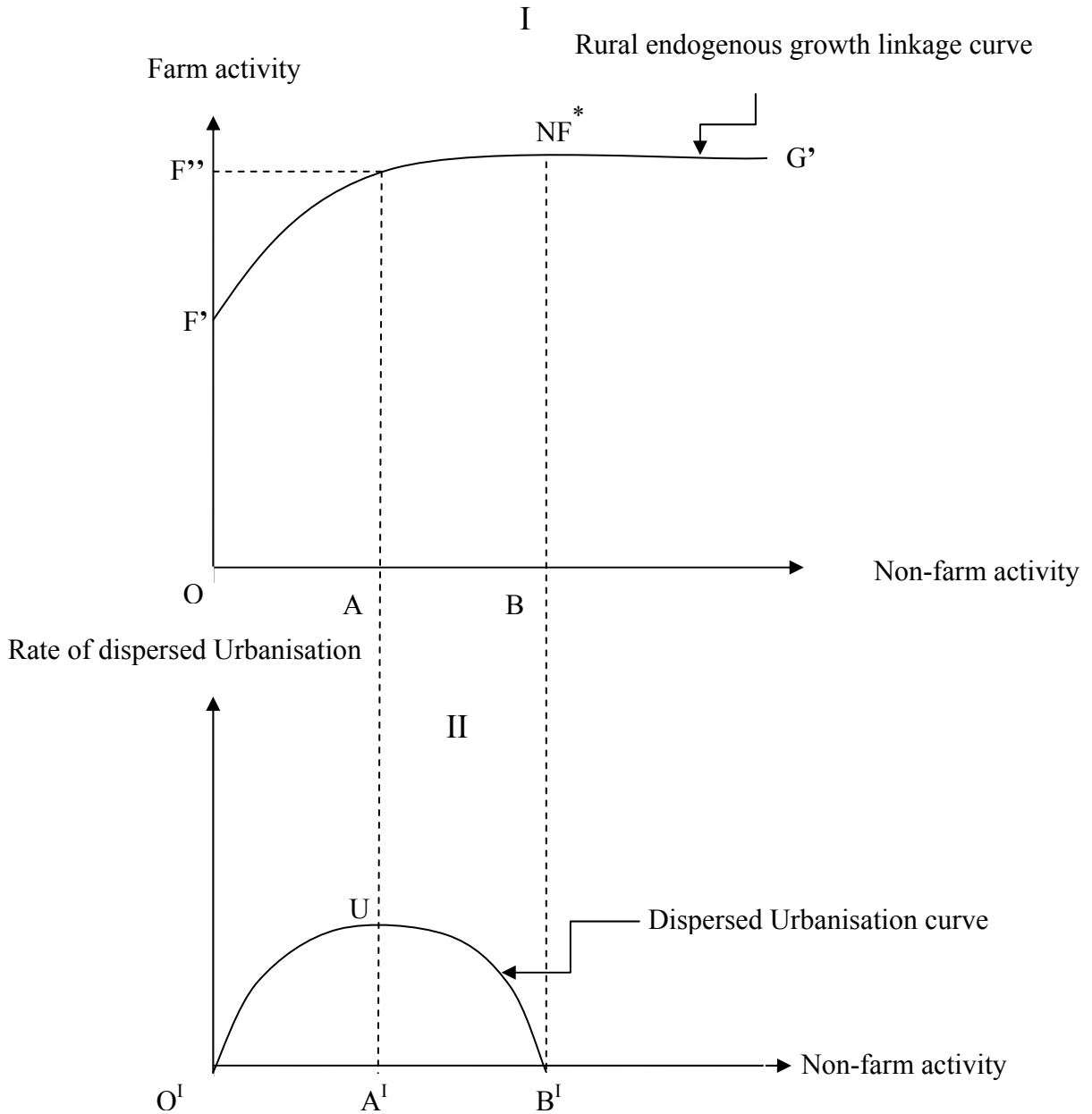
3.5   A DIAGRAMMATIC APPROACH

Taking into account the individual sectoral problems, a holistic approach is required to capture their inter-linkages within and between sectors. Let us first try to conceptualize the existing development process in a four-quadrant model presented in Figure 3.1. Quadrant I represents rural and urban areas in an economy. Similarly, quadrant II, III, and IV represent volume of farm activities, growth linkages between farm and non-farm activities, and volume of non-farm activities, respectively. Let us now describe the curves in the quadrants first.

Quadrant I represents a hypothetical total area comprising total rural and total urban geographical area. For simplicity, the total area has been divided into two areas,

urban (OU) and rural (OR), by a negatively sloped 45^0 degree line. The rationale is: an increase in one area causes decrease in another. Quadrant II represents a relationship between rural area and farm activity. We have employed a positively sloped "farm activity curve" in this quadrant. The positive slope indicates that: increase in rural area would result in increase in farm activity. We present a positively sloped "growth linkage curve" in quadrant III which represents a relationship between farm activity and non-farm activity. The rationale behind employing the positive slope is that increase in non-farm activity would cause an increase in farm activity through backward linkage effects (both production and consumption linkage effects). Similarly, an increase in farm activity would result in an increase in non-farm activity through forward linkage effects. In quadrant IV, the "urban non-farm activity curve" has been employed which is a positively sloped curve, representing a relationship between urban area and non-farm activity. The rationale behind the positive slope is that an increase in urban area would result in an increase in non-farm activity.

Now, in quadrant I (Figure 3.1), it appears that if the economy is totally rural then it is represented by OR. On the other, if the economy is totally urban then it is represented by OU. It is assumed that urbanisation generates non-farm activities in general, but it also helps farm activities to grow as well. Let the economy starts initially from a point when the economy has OM urban area and Ma rural area. This OM urban area generates OM' volume of non-farm activities (quadrant-IV) which in turn generate OM" volume of farm activities (quadrant II). Now, if the economy increases its urbanisation level from OM to ON (corresponding to a move from point a to b on the RU line) by reducing its rural area (through the process of encroaching rural area, i.e. an extension of the existing area) then M'N' volume of non-farm activity as well as M"N" volume of farm activity will be generated. Such increase in non-farm activities largely depends on the nature and degree of urbanisation. And, the corresponding increase in farm activities depends on the growth linkages between non-farm and farm activities. Thus, in other words, the corresponding increase in farm activities (i.e. N"M") is the result of the increase in non-farm activities via the growth linkage effect that has been presented by the "growth linkage curve" in quadrant III. Observe that the growth linkage curve is a positively sloped curve, meaning that there is a positive relationship between non-farm activity and farm activity. If non-farm activity increases, farm activity will also rise and vice-versa. If increase in farm activity results in rise in non-farm activity, the phenomenon is termed as forward linkage effects. Generally this happens when farm sector's outputs are used by the non-farm sector as inputs. But more broadly, or for further generalization as we may also want to define it, forward linkage mechanism is set in motion when rise in farm income induces increase in non-farm income. On the other hand, backward linkage mechanism is defined as a fact when rise in non-farm income, or growth in non-farm sector induces rise in farm income in the way that non-farm sector has generated greater demand for the farm sector outputs. Another comprehensive set of mechanisms can also take place if industry supplies better technology, better equipment and better inputs to the farm sector (which can be termed as forward linkage) and, in the second phase, farm sector grows and starts supplying their outputs to the agro-processing or non-farm sector as inputs. In that case, two preconditions need to be satisfied. One, the industrial sector must supply new machines to the processing industrial sector, and two, the farm sector must be ready to afford better inputs and technology supplied by the industrial sector. A large number of poor farmers may not afford better technology and better inputs and thus such mechanism may not produce desired results. Let us now come back to the Figure-3.1 again.

In Figure-3.1, the growth linkage curve between non-farm and farm activities is presented in Quadrant III. The 45° line, OG Curve implies equal rate of growth between non-farm and farm activities at a given point of time. But since policies are based towards urban industries OG' curve represents the situation in a better way.

3.5.1   Impact of Changes in Industrial Activity on Farm Activity

Observe that, as an effect of M'N' increase in industrial activity, farm activity rises by M"N" which is smaller than M'N'. Urban policy bias is responsible for such lower impact on farm sector. In this perspective, since urban industrial workers do largely benefit from the urban industrialisation on the one hand, and rural elites benefit from the consequent impact on the farm sector, on the other, it is now imperative that a large section of rural population do not benefit significantly from the present policies of the government. This instigates us to look for alternative policy approaches through which a large number of rural population can benefit on the one hand, and unsustainable urban growth is ceased, on the other. Figure-3.2 seeks to formulate an alternative strategy for sustainable development. Let us now describe the strategy illustrated in Figure-3.2. But before that, let us give a brief introductory note about Figure 3.2.

Figure 3.2 is vertically divided into two parts – Part I and Part II. We have employed a "rural endogenous growth linkage curve" in Part I where horizontal axis represents volume of non-farm activity and vertical axis represents volume of farm activity. Initially, the "rural endogenous growth linkage curve" maintains a positive slope but later it becomes almost horizontal. In Part II, a curve has been employed, which looks like inverted U-shape. The horizontal turn of the "rural endogenous growth linkage curve" in Part I indicates growth of non-farm activity as a response to the growth of dispersed urbanisation captured through the inverted U-shaped curve in Part II. The process of dispersed urbanisation reaches optimum level at a certain point in Part II, whereas an optimum level of growth of non-farm activity is indicated in Figure 3.2. We will now discuss them in detail.

In Figure 3.2, an alternative rural development model has been shown into two parts and the parts have been placed in vertical position, i.e. one below another. Such position will help us in explaining the diagrams in a relatively convenient way. Observe that in Figure 3.1, we tried to capture the conventional development model that follows expansion of primate urban agglomeration and large-scale industrialisation which is largely dependent on capital intensive techniques of production. We have to keep in mind that there is a close linkage between urbanisation and industrialisation More specifically, large industries would want to set up their establishments either in city or in a place which is very close to city unless the other places are otherwise rich, e.g. rich in natural/mineral resources. They would generally not want to set up their establishments in places which are infrastructurally backward. The primary motive of the large industry is to raise the level of profits by whatever means available. One of the means is to reduce transaction costs. Large industries want to exploit the economies of scale to the most extent. Better infrastructure in a region helps them a lot in this regard.

Another important reason is that skilled labour which is required by the large industry is available in and near the city. Most of the rural populations are unskilled. Considering this aspect of development, we have formulated an alternative rural development strategy which is presented in Figure 3.2. Part-I in Figure 3.2 represents the relationship between farm activity growth and non-farm activity growth, which is further expressed by the rural endogeneous growth linkage curve. And Part-II in Figure 3.2 represents the relationship between rate of dispersed urbanisation and growth of non-farm

activity. This relationship is further expressed as "dispersed urbanisation curve". Let us first consider Part-I.

In Part-I, observe that the rural endogeneous growth linkage curve first rises upward from point F' on the OF axis and then becomes flatter, almost parallel to the horizontal axis. This indicates that in a village economy, agriculture is the prime focus and grows faster at the initial stage. As farm income grows, people's consumption pattern changes except for the ultra poor section. People become inclined to consume processed food and non-agricultural items. Consequently, rural production patterns also start changing. Greater number of non-farm activities start rising in rural areas. However, this process has to be facilitated by the growth of market outlets. Market mechanism works better in urban centres where people get together for commercial transactions and thus direct supply-demand interaction takes place. But number of markets or urban centres are either inadequate in rural areas or not properly developed. So, commercial transactions are severely hindered in rural areas. In the process of developing rural- urbanisation, storage facility should be given proper importance. Due to lack of proper storage facility, many rural produces go waste. What rural produces urgently need is proper storage facilities and proper market links, among many other basic infrastructural facilities.

In this perspective, Part-II in Figure 3.2 helps us to understand the rural urbanisation or dispersed urbanisation process. As indicated above, the vertical axis gives us the measure of the rate of dispersed urbanisation and the horizontal axis gives us the spread of the non-farm activity in rural areas. At point O', there is no non-farm activity in the village economy which is dependent only on farm activity as depicted in Part-I. As rural economy grows and diversification takes place through the development of processing as well as non-farm activities, urbanisation in rural setting starts growing. They do not grow as big cities; they grow as small urban pockets, maintaining physical linkages between themselves and also with the intermediate and big market centres. If the excess of perishable farm produces can be stored in the proper storage system and the marketing channels are opened up through the rural-urban linkages, diversified farm activities such as poultry, dairy, horticulture may grow up (as indicted by the spread of farm activity from F' to F" on the vertical axis) and similarly varieties of non-farm activities will also grow as shown by OA in Part-I and OA' in Part-II. Note that the F'G' curve in Part- I is termed as rural endogenous growth linkage curve, implying the endogenous growth linkage mechanism or the two-way inter-relationship between the growth of farm activity and the growth of non-farm activity. But, dispersed urbanisation is an exogenous factor in this process of development since it is primarily contingent upon government policy as well as spending. The O'UB' curve in Part-II first starts rising up and then starts falling down after reaching the peak at point U. Observe that the rate of growth of urbanisation is nil at both the points O' and B'. The rural markets or growth centres look extremely traditional in nature at point O'. With the diversification of farm activity, coupled with the rise in overall farm income, there is a need for greater urbanisation in rural areas in small scale manner, or in other words, in dispersed manner. After the point A' in Part-II, spread of non-farm activities keep growing till point B' where the rate of growth of urbanisation becomes zero again, meaning both the growth of non-farm activities and the growth of dispersed urbanisation have reached their optimum level, beyond which their further growth may erase the rural flavor from the town at the district level and thus may gradually lead to giving birth of another large city which is not desirable. That is why a cut-off point NF* has been put on F'G' curve in Part-I, corresponding to point B' in quadrant II, in order to indicate the optimum level of growth of both the non-farm sector and urbanisation in the rural setting.

CHAPTER 4

LABOUR MOVEMENTS, OCCUPATION AND URBANISATION

4.1   INTRODUCTION

In this chapter, we intend to start our discussion from the patterns of migration in order to understand attractions of income/employment-related movement of labour-force from the perspectives of urbanisation and rural industrialisation in West Bengal. The underlying causality of migration needs to be properly captured since it is an important aspect of urbanisation and rural industrialisation Rural labour-force may tend to migrate due to agricultural wage-differentials across regions; growth differentials in rural non-agricultural activities; restricted access of rural unskilled labour into urban industry; and so on. We have very limited understanding about different aspects of movement of rural labour-force, especially the role of urbanisation characteristics and the occupational diversities that are involved in this. Low level of urbanisation causing labour-force to move towards the primary sector in a district, on the one hand, and labour movement towards relatively prosperous rural industrial sector having been supported by more urban-like infrastructure in rural-towns/growth-centres in some other district might be two possible propositions that would need further investigations, the outcome which might shed some light from the viewpoint of better policy prescriptions related to rural economic development. We would now examine district-wise features of migration of labour-force and their causal aspects in the light of occupational distribution which would help us to explain the nature of economic diversification in the districts of the state and to explain – with the help of infrastructural conditions -- why and how the urbanisation factor has played a role.

4.2   LABOUR MOVEMENT AND OCCUPATIONAL DIVERSITY

As illustrated in Table 4.1, it appears that the phenomenon of rural-to-urban (henceforth RU) labour movement (20.2 per cent of total in-migrants) in West Bengal has been outweighed by rural-to-rural (henceforth RR) labour movement (64.1 per cent of total in-migrants). This general feature is automatically reflected at the district level as well, except for two districts, namely Howrah and North 24-Parganas.[8] In these two districts, greater number of small enterprises are concentrated in urban areas as against their rural areas. We will come to the issue of district-wise distribution of several small enterprises later in detail. Let us first concentrate on the issue labour movements to understand the strength of the non-agricultural activities in rural areas at the district level. We would like to now investigate why labour movement is biased towards rural sector in most of the districts. If we take total rural in-migration in a separate table (Table 4.2) and look at the distribution in terms of different sectors then we find that a large chunk (61.5 per cent) of total rural in-migration at the state level has moved to the agriculture sector (including agriculture, hunting, forestry and fishing). Rural manufacturing and repairing sector has been host of 20.8 per cent rural in-migrants. Let us now go into further details.

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[8] Kolkata district in this case is an outlier because it has no rural area.

4.2.1 Primary Sector as a Main Attraction for Rural In-migrants at District Level

Interestingly, in terms of sector-wise, percentile distribution of total rural in-migrants, Purulia district, even being an agriculturally very backward district, has come up to be the top-ranking (82 per cent) district in attracting labour to its agriculture sector.9 Not only that, the agricultural wage level in this district is also found to be the lowest in the state.10 Agriculture in Bankura district is also underdeveloped. The farming system of Bankura is characterized as "subsistence agriculture, with slowly emerging cash-based systems. The crop-pattern here is tilted heavily towards paddy cultivation with traditional agricultural practices" (Government of West Bengal, 2007: 39). If this is the general agricultural feature of these two districts, then how come the agricultural sector of these two districts has occupied very prominent place in terms of rural in-migrants? We do not have any direct answer to this and for that we need to search for other features of these districts to arrive at a plausible explanation.

Let us introduce Table 4.3 which gives us an illustration of the proportion of rural tribal population (commonly known as Scheduled Tribe or ST) in total rural population in each district and total forest area as a percentage of total geographical area of the district. This illustration will help us in examining the case like Purulia. The logic behind showing this table is that a considerable section of the tribal population is still dependent on forest-based livelihood such as hunting, collecting forest produces, etc. All this comes under primary sector (excluding mining etc.). Importantly, tribal population has a general habit of moving from one place to another for these purposes. In the districts of Purulia and Bankura, proportion of rural tribal population in total rural population is very high (20 per cent and 11.1 per cent, respectively). Also, they have relatively significant concentration of forest areas as well (12.33 per cent and 14.92 per cent, respectively). Therefore, we can easily assume that the rural in-migration figures portrayed in the Census data reflect a large number of tribal people's livelihood-related movements across different forest areas in the district. Almost similar arguments can be applicable for Midnapore district. However, it appears from Table 4.3 that there are some other districts which also rank very high either in terms of proportion of forest area or in terms of proportion of rural ST population or both. For example, the two Himalayan districts Darjeeling and Jalpaiguri ranked very high in terms of both the criteria (i.e. tribal population and forest area). But, Darjeeling's economy is relatively tourism-based where service-activities (both in rural and urban areas) play an important role. That is why the primary sector has not been the only attraction for the livelihood-seekers (see Table 4.2). Jalpaiguri's primary sector is made up of both agriculture, on the one hand, and forestry etc., on the other hand, whereas it also has moderate dominance of ecotourism as well. Moreover, in terms of net cropped area, Jalpaiguri's rank is 6 while Darjeeling's rank is 17 (see Sau, undated). This reveals Jalpaiguri's dominance over Darjeeling in terms of scope of agricultural activities. Thus, as a total effect, the proportion of rural in-migrants in agriculture, forestry, hunting, etc. in Jalpaiguri (64.6 per cent) is much higher than that of Darjeeling (41.7 per cent).

In the case of Dakshin Dinajpur and South 24-Parganas districts, the former has very high proportion of ST population with the lowest proportion of forest, while the latter has high proportion of forest but very low proportion of ST population. So, the combined effect (of forest and tribal inhabitants) in relation to labour movement -- as we have seen in the cases of Purulia and Bankura districts -- is perhaps not so strong.

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9 Also, if we look at vertical distribution, agriculture sector in Purulia is found to be the host of the largest number (2,88,180) of rural in-migrants among all districts.

10 According to the Directorate of Agriculture (Evaluation Wing), Government of West Bengal, average daily wage for male agricultural field labourer in 2002-03 was found to be Rs. 50.37 whereas the state average was Rs. 57.92.

However, for more specific conclusions a micro-study is required to be conducted which is beyond the scope of the present study.

To conclude with, as we have mentioned above in the context of Table 4.1, rural activities have outstripped urban activities as far as comparison between RR and RU is concerned. Moreover, when RR is closely observed, we find that, out of 18 districts (Midnapore as an undivided district) in West Bengal, 13 districts have large proportions (roughly more than 50 per cent) of rural in-migrants who were found as engaged in the primary sector (excluding mining etc.). This means that non-agricultural sector in rural West Bengal has still not been major attraction for those who are looking for better employment and income. In sum, a clear-cut conclusion that can be drawn from the above discussion is that village-based primary (agriculture and allied) activities have been very attractive option for those who were looking for employment. This has several implications. Lack of adequate opportunities in non-agricultural activities in both rural and urban areas, coupled with skill deficiency of rural labour-force might be certain possible reasons for greater tendency of rural people to be crowded in the primary sector. Thus, the emerging scenario depicts an unbalanced, dualistic type of development which fails to integrate rural and urban sectors through adequate linkages and facilitation of labour movement from rural primary sector to urban modern sector.

However, whether or not the developmental linkages between rural and urban sectors have been interrupted due to lack of adequate development of the small-scale enterprise sector in the rural towns needs to be examined. We will discuss this issue in the next section.

4.3   RURAL ENTERPRISE SECTOR AS FUELED BY URBANISATION

4.3.1   Overall Illustration

According to the Third Census of Small-Scale Industries, there are 43,295 registered small enterprises and 7,28,093 unregistered enterprises (each of both include three types of activities such as manufacturing, repair and service) in West Bengal (see Table 4.4 and Table 4.5 for registered and unregistered small-scale enterprises, respectively). In nature, registered enterprises are more formal than the unregistered ones, since the former is required to follow various government norms for getting registered.

In case of registered enterprises, manufacturing forms the largest share (83.1 per cent), out of which a large chunk is located in urban areas (see Table 4.4). Registered repairing and service activities constitute a very small share, i.e. only 16.9 per cent (Table 4.4), whereas 46 per cent of the total unregistered enterprises are made up of repairing and service activities (Table 4.5).

As far as rural-urban sectoral division is concerned, it is sometimes held that greater share of registered manufacturing enterprises are located in urban areas while greater share of unregistered manufacturing enterprises are located in rural areas. Thus, one correlation between formality and urban location and another between informality and rural location may be observed. In West Bengal, such correlations are mostly observed, except for unregistered service activities (see the state-level, not district-level, data in Table 4.4 and Table 4.5). In a highly populated economy, small manufacturing sector has special significance due to its greater scope for hiring labour than the repairing and service activities. However, according to Table 4.2, only 20.8 per cent rural in-migrants were seen to be accommodated in rural manufacturing and repairing activities. A large chunk (61.5 per cent) moved to the primary sector. Dominance of the primary sector brings out the existing non-potentiality of rural small manufacturing sector as an

attractive employment provider while the overall output structure of the economy has been witnessing a deviation from the primary sector. Low level of urbanisation at the district level may be held responsible for low growth of potential manufacturing enterprises. Dispersed urbanisation or promotion of rural small towns (supported with necessary infrastructure) could have played significant role. Moreover, since urban service activities are seen to outnumber rural service activities (in both the cases of registered and unregistered enterprises), higher level of urbanisation is expected to foster the growth of service sector as well. Let us now examine the importance of small urban centres in the growth of small enterprises at the disaggregate level, i.e. at district level.

4.3.2 Level of Urbanisation

Let us introduce Table 4.6 which illustrates the concept of urbanisation from various points of view. The last five columns of the table portrays, chronologically from the right side, urbanistion of the districts from different perspectives: (1) urban population as percentage of total population, (2) urban area as percentage of total area, (3) Population density in urban area, (4) percentage of administrative blocks with less than 10 per cent urbanisation, and (5) percentage of administrative blocks with nil urbanisation. In terms of urban population, only 5 districts11 such as Darjeeling, Burdwan, Hooghly, Howrah, and North 24-Parganas are found to be above the overall urbanisation level of the state (which is 27.97 per cent). All other districts (i.e. 12 districts, Midnapore as an undivided district) are individually far below the state level as a whole. If we exclude Kolkata from the count then the state-level urbnisation is estimated to be 23.62 per cent (not shown in Table 4.6). Still, those 12 districts remain under the state-level overall urbanisation level.

However, we should keep in view that the measure of urbanisation in terms of mere population concentration, coupled with dominance of non-agricultural male employment, may not portray clear geographical spread of urban area in a district. Now, let us introduce the geographic space in the concept of urbanisation (the fourth column from the right side of Table 4.6). Now, a mix of the two, i.e. population and geographic area, would reveal a more interesting picture. For example, in North 24-Parganas 54.3 per cent urban population are concentrated in a small   proportion of area, i.e. in 5.35 per cent area of the whole district. This is again reflected in the population density figure which is given in the third column from the right side of Table 4.6. Observe that this district has a huge population density (i.e. 23,081 per sq. km.) in its urban area.12 Next to this district is Howrah, urban population density of which is 9816 per sq. km. and where a little more than 50 per cent of its people live in 14.94 per cent of its total geographic area. Among the 5 districts mentioned above, Burdwan has the lowest population density in its urban area, accommodating 36.94 per cent of its total population in 11.39 per cent of its total area.

In this context, let us now again refer to Table 4.4 and 4.5 which show that there are three districts in West Bengal, viz. Howrah, North 24-Parganas and Darjeeling, where greater number of small enterprises (both registered and unregistered) are located in urban areas than in rural areas. This is highly consistent with the above-mentioned finding where we have seen that only 5 districts in the state have relatively high level of urbanisation. Note that Howrah, North 24-Parganas and Darjeeling belong to those 5

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[11] Except Kolkata metropolitan district

[12] We again bar Kolkata from our analysis for its metropolitan nature, even though it occupies the highest position in terms of urban population density.

districts. This apparently supports a positive relationship between urbanisation and greater concentration of small enterprises. However, in other districts we observe that greater proportion of small

Actually, from the above analysis of urbanisation, we are unable to capture the spread of urbanisation in rural setting of a district, which we have earlier presumed to be an influencing factor of rural enterprise development. We will now discuss this in further detail.

4.3.4   Dispersed Urbanisation and Rural Non-farm Sector at District Level

The second column from the right side of Table 4.6 depicts proportion of administrative blocks (with less than 10 per cent urbanisation) relative to total number of blocks in a district. This is actually nothing but an expression of degree of non-dispersal of urbanisation, which has been captured though a combination of population concentration (which is one of the indicators of urbanisation) and geographical spread of urbanisation in a district (captured through the number of administrative blocks). It is evident from the second column (from right side) that only two districts in West Bengal belong to the below-75-per-cent-group. They are Howrah and Burdwan. The other districts portray very poor picture. Especially, there are districts such as Bankura, Birbhum, Coochbehar, Uttar Dinajpur, Dakshin Dinajpur, and Malda where all administrative blocks have very low level of urbanisation (10 per cent or below). Even the proportion of nil urbanisation at block level in most of the districts is very high (see the last column of Table 4.6). Thus, the general level of urbanisation in West Bengal districts is at a very low level.

Now, as far as development of rural small enterprises is concerned, what is the implication of such low level of urbanisation? The answer to this question is not a straightforward one. Earlier, we have observed that, at the state level, greater number of registered manufacturing enterprises are located in urban areas. But, if we exclude Kolkata, registered small enterprises at the state level are found to be tended towards rural location. More interestingly, greater proportion of small manufacturing enterprises (both registered and unregistered) are found to be located in rural areas in more than 70 per cent of West Bengal districts. There are districts such as Bankura, Birbhum, Coochbehar, Dakshin Dinajpur, and Malda which have even cent per cent poorly urbanized blocks (see second column from right side of Table 4.6). Hence, some kind of complexity is involved in this matter. In some urbanized districts, greater proportion of small enterprises have been found to be located in urban areas, whereas, in the less-urbanised districts, greater proportion of small enterprises are found to be located in rural areas (although there is possibility that in the less-urbanised districts some kinds of village activities -- for example, biri industry -- would generate and flourish). However, the matrix becomes more complex when we include repair and service activities in this analysis. Let us now discuss this.

As far as repairing and service-related enterprises are concerned, we do not find significant number of enterprises in the registered group (Table 4.4). Again, although there are many repair and service enterprises in the unregistered category, greater number of repairing activities are located in rural areas, whereas large proportion of service activities are found in urban areas. It now becomes difficult to capture as well as explain the complex matrix of linkages in a very simple formulation with the help of absolute figures of two concepts, dispersed urbanisation and rural industrialisation It requires further scrutiny in a frame of set of variables, for which we propose to continue the analysis with the help of linear modeling approach in the next chapter.

TABLE 4.1
In-migrants from within India for Work Reasons

District	Total	RR	UR	Total Rural In-migration	RU	UU	Total Urban In-migration
Bankura	442957 (100)	408887 (92.3)	18327 (4.1)	427214 (96.4)	10313 (2.3)	5430 (1.2)	15743 (3.6)
Birbhum	274814 (100)	228865 (83.3)	12987 (4.7)	241852 (88.0)	24313 (8.8)	8649 (3.1)	32962 (12.0)
Burdwan	705923 (100)	390805 (55.4)	23666 (3.4)	414471 (58.7)	214829 (30.4)	76623 (10.9)	291452 (41.3)
Cooch Behar	218688 (100)	189942 (86.9)	8929 (4.1)	198871 (90.9)	12304 (5.6)	7513 (3.4)	19817 (9.1)
Dakshin Dinajpur	149044 (100)	131531 (88.2)	5238 (3.5)	136769 (91.8)	8002 (5.4)	4273 (2.9)	12275 (8.2)
Darjelling	117398 (100)	53857 (45.9)	9676 (8.2)	63533 (54.1)	32254 (27.5)	21611 (18.4)	53865 (45.9)
Hooghly	556943 (100)	303173 (54.4)	24688 (4.4)	327861 (58.9)	132134 (23.7)	96948 (17.4)	229082 (41.1)
Howrah	334630 (100)	92302 (27.6)	11257 (3.4)	103559 (30.9)	154147 (46.1)	76924 (23.0)	231071 (69.1)
Jalpaiguri	368539 (100)	274997 (74.6)	19464 (5.3)	294461 (79.9)	49580 (13.5)	24498 (6.6)	74078 (20.1)
Kolkata	392200 (100)	0	0	0	295797 (75.4)	96403 (24.6)	392200 (100)
Malda	354520 (100)	319807 (90.2)	9348 (2.6)	329155 (92.8)	16021 (4.5)	9344 (2.6)	25365 (7.2)
Midnapore	963731 (100)	849622 (88.2)	25555 (2.7)	875177 (90.8)	65034 (6.7)	23520 (2.4)	88554 (9.2)
Murshidabad	347717 (100)	260365 (74.9)	9947 (2.9)	270312 (77.7)	64533 (18.6)	12872 (3.7)	77405 (22.3)
Nadia	302075 (100)	200875 (66.5)	17681 (5.9)	218556 (72.4)	49159 (16.3)	34360 (11.4)	83519 (27.6)
North 24-Parganas	834918 (100)	194605 (23.3)	25337 (3.0)	219942 (26.3)	268991 (32.2)	345985 (41.4)	614976 (73.7)
Purulia	372765 (100)	344900 (92.5)	6680 (1.8)	351580 (94.3)	13304 (3.6)	7881 (2.1)	21185 (5.7)
South 24-Parganas	409010 (100)	283370 (69.3)	19894 (4.9)	303264 (74.1)	63099 (15.4)	42647 (10.4)	105746 (25.9)
Uttar Dinajpur	225561 (100)	197644 (87.6)	5547 (2.5)	203191 (90.1)	14442 (6.4)	7928 (3.5)	22370 (9.9)
West Bengal	7371433 (100)	4725302 (64.1)	254466 (3.5)	4979768 (67.6)	1488333 (20.2)	903332 (12.3)	2391665 (32.4)

Source: *D-Series, Census of India, 2001*
Note: *RR: Rural-to-Urban; UR: Urban-to-Rural; RU: Rural-to-Urban; UU: Urban-to-Urban*

TABLE 4.2
Rural In-migrants from within India for work reason

District	Agriculture, Hunting, Forestry and Fishing	Mining and Quarrying	Manufacturing and repairs	Electricity, Gas and Water Supply	Construction	Wholesale and Retail Trade	Hotels and Restaurants	Transport, Storage and Communications	Others	Total
Bankura	324754 (76.0)	1510 (0.4)	56010 (13.1)	1280 (0.3)	3830 (0.9)	10510 (2.5)	1050 (0.2)	2595 (0.6)	25675 (6.0)	427214 (100)
Birbhum	153817 (63.6)	2175 (0.9)	42640 (17.6)	1660 (0.7)	3320 (1.4)	12160 (5.0)	1300 (0.5)	2930 (1.2)	21850 (9.0)	241852 (100)
Burdwan	252191 (60.8)	12230 (3.0)	71400 (17.2)	810 (0.2)	7855 (1.9)	19785 (4.8)	1605 (0.4)	7530 (1.8)	41065 (9.9)	414471 (100)
Cooch Behar	148026 (74.4)	40 (0.0)	19555 (9.8)	230 (9.8)	2955 (1.5)	8730 (4.4)	725 (0.4)	5005 (2.5)	13605 (6.8)	198871 (100)
Dakshin Dinajpur	104629 (76.5)	5 (0.0)	15025 (11.0)	110 (0.1)	1025 (0.7)	4785 (3.5)	350 (0.3)	1815 (1.3)	9025 (6.6)	136769 (100)
Darjeeling	26513 (41.7)	1285 (2.0)	5265 (8.3)	800 (1.3)	2650 (4.2)	7180 (11.3)	725 (1.1)	2505 (3.9)	16610 (26.1)	63533 (100)
Hooghly	186961 (57.0)	150 (0.0)	71790 (21.9)	795 (0.2)	8445 (2.6)	20390 (6.2)	1385 (0.4)	7685 (2.3)	30260 (9.2)	327861 (100)
Howrah	30239 (29.2)	65 (0.1)	41115 (39.7)	215 (0.2)	3065 (3.0)	10165 (9.8)	665 (0.6)	2730 (2.6)	15300 (14.8)	103559 (100)
Jalpaiguri	190216 (64.6)	835 (0.3)	24770 (8.4)	605 (0.2)	10530 (3.6)	23655 (8.0)	2270 (0.8)	12820 (4.4)	28760 (9.8)	294461 (100)
Kolkata	-	-	-	-	-	-	-	-	-	-
Malda	171325 (52.0)	160 (0.0)	116145 (35.3)	1070 (0.3)	4505 (1.4)	12690 (3.9)	1280 (0.4)	4405 (1.3)	17575 (5.3)	329155 (100)
Midnapore	609737 (69.7)	570 (0.1)	165745 (18.9)	1535 (0.2)	5675 (0.6)	25360 (2.9)	3470 (0.4)	8490 (1.0)	54595 (6.2)	875177 (100)
Murshidabad	73837 (27.3)	415 (0.2)	152200 (56.3)	555 (0.2)	5860 (2.2)	14300 (5.3)	795 (0.3)	3655 (1.4)	18695 (6.9)	270312 (100)
Nadia	100316 (45.9)	55 (0.0)	63675 (29.1)	385 (0.2)	4550 (2.1)	18120 (8.3)	1200 (0.5)	6200 (2.8)	24055 (11.0)	218556 (100)
North 24-parganas	86662 (39.4)	50 (0.0)	68740 (31.3)	420 (0.2)	8355 (3.8)	18980 (8.6)	1450 (0.7)	8440 (3.8)	26845 (12.2)	219942 (100)
Purulia	288180 (82.0)	1125 (0.3)	38660 (11.0)	280 (0.1)	2425 (0.7)	4540 (1.3)	385 (0.1)	1610 (0.5)	14375 (4.1)	351580 (100)
South 24-Parganas	153104 (50.5)	75 (0.0)	61150 (20.2)	370 (0.1)	8330 (2.7)	24115 (8.0)	2035 (0.7)	8175 (2.7)	45910 (15.1)	303264 (100)
Uttar Dinajpur	159796 (78.6)	15 (0.0)	24150 (11.9)	325 (0.2)	1530 (0.8)	6515 (3.2)	785 (0.4)	2395 (1.2)	7680 (3.8)	203191 (100)
West Bengal	3060303 (61.5)	20760 (0.4)	1038035 (20.8)	11445 (0.2)	84905 (1.7)	241980 (4.9)	21475 (0.4)	88985 (1.8)	411880 (8.3)	4979768 (100)

Note: "Others" include social and personal service activities; private households with employed persons; extra-territorial organisations and bodies.
Source: Census of India (D-series), 2001

TABLE 4.3
District-wise Tribal Population and Forest Area

District	Rural population[@]	Rural ST population[@]	Per cent of rural ST population to total rural population	Forest area as per cent of geographical area[#]
Bankura	2957447	329080	11.1	14.92
Birbhum	2757002	198612	7.2	1.5
Burdwan	4348466	347072	8.0	3.4
Coochbehar	2253537	178878	7.9	2.57
Dakshin Dinajpur	1306324	397599	30.4	0.68
Darjeeling	1088740	178878	16.4	70.53
Hooghly	3354227	198486	5.9	2.19
Howrah	2121109	8543	0.4	5.45
Jalpaiguri	2794291	625585	22.4	38.75
Maldah	3049528	236271	7.7	3.13
Medinipur	8626883	774315	9.0	18.15
Murshidabad	5133835	73202	1.4	1.6
Nadia	3625308	101911	2.8	2.42
North 24-Parganas	4083339	168686	4.1	2.98
Purulia	2281090	456573	20.0	12.33
South 24-Parganas	5820469	79208	1.4	22.92
Uttar Dinajpur	2147351	122110	5.7	5.25

Note: *ST denotes Scheduled Tribe population.*
Source: [@] *Census of India 2001;* [#] *Forest Survey of India, State of Forest Report 2005*

TABLE 4.4
District-wise Distribution of Registered Small-scale Enterprises

District	Manufacturing			Repairing			Service			TOTAL
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	
Bankura	229 (12.29)	1515 (81.28)	1743 (93.51)	11 (0.59)	13 (0.70)	24 (1.29)	41 (2.20)	56 (3.00)	97 (5.20)	**1864** (100)
Birbhum	315 (22.34)	861 (61.06)	1176 (83.40)	10 (0.71)	6 (0.43)	17 (1.21)	102 (7.23)	115 (8.16)	217 (15.39)	**1410** (100)
Burdwan	1380 (37.67)	1437 (39.23)	2818 (76.93)	29 (0.79)	5 (0.14)	35 (0.96)	541 (14.77)	269 (7.34)	811 (22.14)	**3663** (100)
Cooch Behar	153 (28.13)	234 (43.01)	387 (71.14)	0 (0.00)	1 (0.18)	1 (0.18)	101 (18.57)	55 (10.11)	155 (28.49)	**544** (100)
Dakshin Dinajpur	120 (32.79)	167 (45.63)	287 (78.42)	3 (0.82)	7 (1.91)	10 (2.73)	29 (7.92)	40 (10.93)	69 (18.85)	**366** (100)
Darjeeling	331 (44.19)	176 (23.50)	507 (67.69)	9 (1.20)	1 (0.13)	10 (1.34)	177 (23.63)	55 (7.34)	232 (30.97)	**749** (100)
Hooghly	852 (32.19)	1010 (38.16)	1862 (70.34)	22 (0.83)	15 (0.57)	37 (1.40)	361 (13.64)	387 (14.62)	748 (28.26)	**2647** (100)
Howrah	6328 (83.19)	930 (12.23)	7258 (95.41)	51 (0.67)	2 (0.03)	53 (0.70)	178 (2.34)	118 (1.55)	296 (3.89)	**7607** (100)
Jalpaiguri	545 (32.42)	647 (38.49)	1192 (70.91)	19 (1.13)	3 (0.18)	22 (1.31)	245 (14.57)	222 (13.21)	467 (27.78)	**1681** (100)
Kolkata	6219 (89.15)	0 (0.00)	6219 (89.15)	244 (3.50)	0 (0.00)	244 (3.50)	513 (7.35)	0 (0.00)	513 (7.35)	**6976** (100)
Malda	162 (15.55)	512 (49.14)	673 (64.59)	7 (0.67)	2 (0.19)	9 (0.86)	110 (10.56)	250 (23.99)	359 (34.45)	**1042** (100)
Midnapore	599 (14.82)	2446 (60.50)	3045 (75.32)	10 (0.25)	34 (0.84)	44 (1.09)	288 (7.12)	666 (16.47)	954 (23.60)	**4043** (100)
Murshidabad	540 (25.36)	1114 (52.33)	1654 (77.69)	31 (1.46)	7 (0.33)	38 (1.78)	201 (9.44)	236 (11.09)	436 (20.48)	**2129** (100)
Nadia	562 (31.17)	668 (37.05)	1230 (68.22)	3 (0.17)	14 (0.78)	17 (0.94)	230 (12.76)	326 (18.08)	556 (30.84)	**1803** (100)
North 24-Parganas	2508 (74.91)	539 (16.10)	3047 (91.01)	25 (0.75)	4 (0.12)	29 (0.87)	161 (4.81)	111 (3.32)	272 (8.12)	**3348** (100)
Purulia	401 (32.05)	581 (46.44)	982 (78.50)	3 (0.24)	4 (0.32)	7 (0.56)	102 (8.15)	160 (12.79)	262 (20.94)	**1251** (100)
South 24-Parganas	859 (51.59)	707 (42.46)	1566 (94.05)	7 (0.42)	3 (0.18)	10 (0.60)	49 (2.94)	39 (2.34)	88 (5.29)	**1665** (100)
Uttar Dinajpur	220 (43.39)	177 (34.91)	397 (78.30)	2 (0.39)	1 (0.20)	3 (0.59)	64 (12.62)	43 (8.48)	107 (21.10)	**507** (100)
West Bengal	**22046** (50.92)	**13932** (32.18)	**35978** (83.10)	**476** (1.10)	**126** (0.29)	**602** (1.39)	**3516** (8.12)	**3200** (7.39)	**6715** (15.51)	**43295** (100)

Source: Estimated from the Third Census of SSI Units, 2001-02, Directorate of Cottage & Small Scale Industries, West Bengal.

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TABLE 4.5
District-wise Distribution of Unregistered Small-scale Enterprises

District	Manufacturing			Repairing			Service			TOTAL
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	
Bankura	336 (2.19)	6025 (39.22)	6361 (41.41)	411 (2.68)	3358 (21.86)	3769 (24.54)	242 (1.58)	4989 (32.48)	5231 (34.05)	**15361 (100)**
Birbhum	619 (1.32)	33276 (71.18)	33895 (72.50)	1160 (2.48)	5345 (11.43)	6504 (13.91)	1444 (3.09)	4909 (10.50)	6352 (13.59)	**46752 (100)**
Burdwan	5397 (11.17)	15079 (31.21)	20475 (42.39)	5583 (11.56)	5275 (10.92)	10858 (22.48)	8891 (18.41)	8082 (16.73)	16974 (35.14)	**48307 (100)**
Cooch Behar	2627 (12.65)	8371 (40.32)	10998 (52.97)	1534 (7.39)	2769 (13.34)	4303 (20.73)	3225 (15.53)	2235 (10.76)	5461 (26.30)	**20762 (100)**
Dakshin Dinajpur	1162 (5.43)	15744 (73.58)	16906 (79.01)	151 (0.71)	3708 (17.33)	3859 (18.04)	58 (0.27)	574 (2.68)	632 (2.95)	**21397 (100)**
Darjeeling	3405 (24.14)	646 (4.58)	4051 (28.72)	1748 (12.39)	892 (6.32)	2640 (18.71)	6108 (43.30)	1308 (9.27)	7416 (52.57)	**14107 (100)**
Hooghly	6250 (21.40)	5197 (17.80)	11447 (39.20)	5226 (17.90)	2772 (9.49)	7998 (27.39)	6935 (23.75)	2820 (9.66)	9756 (33.41)	**29201 (100)**
Howrah	15646 (32.86)	10385 (21.81)	26031 (54.67)	6510 (13.67)	2074 (4.36)	8584 (18.03)	11159 (23.44)	1843 (3.87)	13002 (27.31)	**47616 (100)**
Jalpaiguri	5005 (22.14)	6556 (29.00)	11561 (51.14)	1506 (6.66)	3261 (14.43)	4767 (21.09)	2198 (9.72)	4079 (18.04)	6277 (27.77)	**22605 (100)**
Kolkata	18576 (33.82)	0 (0.00)	18576 (33.82)	8477 (15.44)	0 (0.00)	8477 (15.44)	27866 (50.74)	0 (0.00)	27866 (50.74)	**54919 (100)**
Malda	555 (2.38)	14839 (63.63)	15394 (66.01)	105 (0.45)	1160 (4.97)	1265 (5.42)	1199 (5.14)	5463 (23.43)	6662 (28.57)	**23320 (100)**
Midnapore	4996 (4.84)	50054 (48.53)	55050 (53.37)	8715 (8.45)	17920 (17.37)	26635 (25.82)	6046 (5.86)	15412 (14.94)	21459 (20.80)	**103144 (100)**
Murshidabad	24103 (33.77)	37309 (52.28)	61413 (86.05)	630 (0.88)	4697 (6.58)	5327 (7.46)	1064 (1.49)	3564 (4.99)	4627 (6.48)	**71367 (100)**
Nadia	3696 (15.31)	3353 (13.89)	7049 (29.20)	1574 (6.52)	2088 (8.65)	3662 (15.17)	7959 (32.97)	5473 (22.67)	13432 (55.64)	**24143 (100)**
North 24-Parganas	18620 (23.15)	6447 (8.02)	25068 (31.17)	13387 (16.65)	4495 (5.59)	17882 (22.23)	25725 (31.99)	11751 (14.61)	37477 (46.60)	**80426 (100)**
Purulia	2920 (15.24)	10691 (55.79)	13611 (71.03)	889 (4.64)	1533 (8.00)	2422 (12.64)	1789 (9.34)	1340 (6.99)	3129 (16.33)	**19162 (100)**
South 24-Parganas	17345 (26.06)	22534 (33.85)	39879 (59.91)	1747 (2.62)	6486 (9.74)	8232 (12.37)	9374 (14.08)	9084 (13.65)	18458 (27.73)	**66569 (100)**
Uttar Dinajpur	402 (2.12)	13289 (70.18)	13691 (72.31)	515 (2.72)	1955 (10.32)	2470 (13.04)	459 (2.42)	2315 (12.23)	2774 (14.65)	**18935 (100)**
West Bengal	**130226** (17.89)	**262842** (36.10)	**393068** (53.99)	**59152** (8.12)	**70379** (9.67)	**129531** (17.79)	**119829** (16.46)	**85664** (11.77)	**205494** (28.22)	**728093 (100)**

Source: *Estimated from the Third Census of SSI Units, 2001-02, Directorate of Cottage & Small Scale Industries, West Bengal.*

TABLE 4.6
District-wise Distribution of Area and Population and Number of Administrative Blocks with Urbanisation of 10 per cent or below

District	Population		Area (in sq. km.)		Urban population as percentage of total population	Urban area as percentage of total area	Population density in urban area (per sq.km)	Ratio of no. of blocks with Urbanisation of 10 per cent or below relative to total no. of blocks (in per cent)*	Ratio of no. of blocks with nil Urbanisation relative to total no. of blocks (in per cent)*
	Total	Urban	Total	Urban					
Bankura	3192695	235248	6882	61.49	7.37	0.89	3826	100.00	95.45
Birbhum	3015422	258420	4545	49.98	8.57	1.10	5170	100.00	94.74
Burdwan	6895514	2547048	7024	800.18	36.94	11.39	3183	70.97	58.06
Cooch Behar	2479155	225618	3387	41.34	9.1	1.22	5458	100.00	75.00
Dakshin Dinajpur	1503178	196854	2219	22.7	13.1	1.02	8672	100.00	87.50
Darjeeling	1609172	520432	3149	75.23	32.34	2.39	6918	83.33	66.67
Hooghly	5041976	1687749	3149	198.81	33.47	6.31	8489	83.33	66.67
Howrah	4273099	2151990	1467	219.24	50.36	14.94	9816	64.29	42.86
Jalpaiguri	3401173	606882	6227	121.07	17.84	1.94	5013	76.92	46.15
Kolkata	4572876	4572876	185	185	100	100	24718	0.00	0.00
Malda	3290468	240940	3733	25.37	7.32	0.68	9497	100.00	93.33
Midnapore	9610788	983905	14081	385.22	10.24	2.74	2554	98.15	83.33
Murshidabad	5866569	732734	5324	128.89	12.49	2.42	5685	80.77	69.23
Nadia	4604827	979519	4094	499.56	21.27	12.20	1961	82.35	52.94
North 24-Parganas	8934286	4850947	3927	210.17	54.3	5.35	23081	81.82	63.64
Purulia	2536516	255426	6259	79.37	10.07	1.27	3218	80.00	65.00
South 24-Parganas	6906689	1086220	9960	176.76	15.73	1.77	6145	89.66	72.41
Uttar Dinajpur	2441794	294443	3140	44.36	12.06	1.41	6638	100.00	77.78
West Bengal	80176197	22427251	88752	3324.74	27.97	3.75	6746		

Source: *Census of India, 2001*

Note: **This column grossly accounts for administrative block-wise estimation and, more clearly, it does not include urban bodies like municipalities. In other words, this gives an estimation of non-spread of urban areas in rural setting, or the non-spread of rural-urbanisation.*

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APPENDIX 4A
Urban In-migrants from within India for Work Reason

District	Agriculture, Hunting, Forestry and Fishing	Mining and Quarrying	Manufacturing and repairs	Electricity, Gas and Water Supply	Construction	Wholesale and Retail Trade	Hotels and Restaurants	Transport, Storage and Communications	Others	Total
Bankura	901 (5.7)	64 (0.4)	3108 (19.7)	294 (1.9)	882 (5.6)	2258 (14.3)	240 (1.5)	1104 (7.0)	6892 (43.8)	15743 (100)
Birbhum	1376 (4.2)	272 (0.8)	4588 (13.9)	562 (1.7)	2082 (6.3)	6668 (20.2)	630 (1.9)	3424 (10.4)	13360 (40.5)	32962 (100)
Burdwan	14486 (5.0)	45540 (15.6)	62102 (21.3)	6446 (2.2)	17394 (6.0)	44970 (15.4)	4028 (1.4)	28844 (9.9)	67642 (23.2)	291452 (100)
Cooch Behar	725 (3.7)	14 (0.1)	2622 (13.2)	246 (1.2)	746 (3.8)	4200 (21.2)	258 (1.3)	1728 (8.7)	9278 (46.8)	19817 (100)
Dakshin Dinajpur	747 (6.1)	10 (0.1)	1888 (15.4)	116 (0.9)	452 (3.7)	1802 (14.7)	118 (1.0)	978 (8.0)	6164 (50.2)	12275 (100)
Darjeeling	1069 (2.0)	128 (0.2)	5280 (9.8)	440 (0.8)	3810 (7.1)	14840 (27.6)	1630 (3.0)	7870 (14.6)	18798 (34.9)	53865 (100)
Hooghly	7598 (3.3)	750 (0.3)	84616 (36.9)	2592 (1.1)	14802 (6.5)	35074 (15.3)	2730 (1.2)	18096 (7.9)	62824 (27.4)	229082 (100)
Howrah	3271 (1.4)	356 (0.2)	90588 (39.2)	1058 (0.5)	9308 (4.0)	41524 (18.0)	3712 (1.6)	27740 (12.0)	53514 (23.2)	231071 (100)
Jalpaiguri	4402 (5.9)	376 (0.5)	8902 (12.0)	974 (1.3)	5576 (7.5)	17994 (24.3)	1570 (2.1)	11414 (15.4)	22870 (30.9)	74078 (100)
Kolkata	3292 (0.8)	680 (0.2)	71074 (18.1)	2528 (0.6)	21142 (5.4)	82638 (21.1)	10710 (2.7)	48464 (12.4)	151672 (38.7)	392200 (100)
Malda	959 (3.8)	76 (0.3)	4890 (19.3)	400 (1.6)	1122 (4.4)	4616 (18.2)	462 (1.8)	3930 (15.5)	8910 (35.1)	25365 (100)
Midnapore	7524 (8.5)	364 (0.4)	13236 (14.9)	1056 (1.2)	4048 (4.6)	13250 (15.0)	1890 (2.1)	11356 (12.8)	35830 (40.5)	88554 (100)
Murshidabad	2665 (3.4)	90 (0.1)	43914 (56.7)	1826 (2.4)	2310 (3.0)	6296 (8.1)	656 (0.8)	2588 (3.3)	17060 (22.0)	77405 (100)
Nadia	3901 (4.7)	124 (0.1)	27104 (32.5)	922 (1.1)	3750 (4.5)	13270 (15.9)	1092 (1.3)	6262 (7.5)	27094 (32.4)	83519 (100)
North 24-parganas	10270 (1.7)	1398 (0.2)	183572 (29.9)	5874 (1.0)	33852 (5.5)	106918 (17.4)	7604 (1.2)	53786 (8.7)	211702 (34.4)	614976 (100)
Purulia	1227 (5.8)	1234 (5.8)	1858 (8.8)	1328 (6.3)	898 (4.2)	3032 (14.3)	246 (1.2)	3468 (16.4)	7894 (37.3)	21185 (100)
South 24-Parganas	2342 (2.2)	266 (0.3)	29160 (27.6)	1022 (1.0)	6726 (6.4)	16740 (15.8)	1592 (1.5)	9700 (9.2)	38198 (36.1)	105746 (100)
Uttar Dinajpur	1538 (6.9)	46 (0.2)	2874 (12.8)	504 (2.3)	1110 (5.0)	5162 (23.1)	328 (1.5)	2136 (9.5)	8672 (38.8)	22370 (100)
West Bengal	68293 (2.9)	51788 (2.2)	641376 (26.8)	28188 (1.2)	130010 (5.4)	421252 (17.6)	39496 (1.7)	242888 (10.2)	768374 (32.1)	2391665 (100)

Note: "Others" include social and personal service activities; private households with employed persons; extra-territorial organisations and bodies.
Source: Census of India (D-series), 2001

CHAPTER 5

POLICY IMPLICATIONS OF RURAL URBANISATION AND RURAL INDUSTRIALISATION AN ILLUSTRATION THROUGH EMPIRICAL MODELS

The characteristics of urban area often tend to draw upon size/density of population and level of non-farm employment in a particular geographic area. In some poor parts of the world, rural areas are known as pastoral folk, heavily dependent on agricultural activities, poor infrastructure, limited employment opportunities and low levels of income. On the other hand, the few primate cities are known as the hub of non-agricultural activities, better infrastructure, better institutional environment, greater employment opportunities and higher levels of income. To minimize this gap, urban amenities should be taken to rural areas by adopting a policy of dispersed urbanisation. For that, the whole rural area does not need to be transformed into urban area but it requires to be well connected with the nearest small urban centres which do also need to be supported with proper amenities. The higher degree of rural-urban interaction helps rural economic diversification process to set in motion and thereby develops healthy rural settings with urban ambience. The traditional sector i.e. agriculture is already burdened with over-employment in many parts of West Bengal. Rural non-farm sector as a source of generation of new employment opportunities has been conceptualized by many scholars to be of immense importance. The degree of spatial underdevelopment of a region can be captured through the movements of labour from agrarian (mainly concentrated in rural areas) to non-agrarian sectors (mainly concentrated in urban areas). Poor, less-educated, people move from agrarian sector to non-agrarian sector because of two main reasons: one, income earned through their involvement in agricultural activities is insufficient, and, two, non-farm employment is not adequately available in their own locality. Besides, a section of the unskilled rural labour force living in an agriculturally backward area, in general, out-migrates to relatively fertile agricultural areas.

We would now like to capture the need for adopting dispersed urbanisation policies through a couple of empirical models. In the first model, our emphasis would be on what determines rural to urban migration. It is assumed that labour force living in rural areas endowed with low levels of physical infrastructure, social infrastructure, banking service, population concentration, and electricity consumption in commercial activities as well as public works would tend to migrate to urban areas.

5.1 VARIABLES AND HYPOTHESES

5.1.1 Model 1

Dependent variable

$$RURR: \frac{\text{Rural - Urban migration (for employment \& income)}}{\text{Rural - Rural migration (for employment \& income)}}$$

>1; mostly seeking non-agricultural employment either for survival or for a better living. This happens when non-agricultural employment opportunities are absent due to proper industrialisation (this indicates rural- urbanisation level is low).

=1; seeking employment outside the village for survival either in agriculture or in non-agriculture.

<1; seeking agricultural employment due to lack of non-agricultural skill or urban links or information.

Independent variable

a)   PII: Physical Infrastructure Index

Hypothesis: PII and RURR are negatively related (PII is an indicator of rural physical infrastructure of a district. So, the higher the value of PII, the higher the possibility of rural to rural migration.)

Small economic centres (e.g. small towns and local markets) in a regional pocket may co-determine growth prospects of the surrounding rural setting. Such centres and their surroundings, endowed with physical infrastructure such as good road connectivity, electricity etc., may offer household-level prospects of rural diversified activities to the local population, which would help them to escape poverty and thereby contain rural-urban migration (Davis, 2006). Rapid urbanisation and economic growth of a country, coupled with improved transport and communication networks, creates important economic linkages between urban and rural areas and that in turn opens up new opportunities for rural households (Tacoli, 1998; Tacoli and Satterthwaite, 2003). As Bhalla (1997) noticed in India, rapid rural non-farm growth is found to be occurring along transport corridors linked to major urban centers, largely independent of their agricultural base. Otsuka (2007) showed similar experience in Southeast Asia and in China, emphasizing important role of low transport costs and urban-to-rural subcontracting for labor-intensive manufactures. However, in a country like India where the distance between villages and major urban centres is a matter of concern, the physical connectivity between rural growth centres (in other words, local small urban markets) and remotest rural areas might be helpful to create more vibrant local economy, minimizing the scope for rural elites or middlemen to take the full benefit of directly accessing large urban centres.

Among the basic infrastructural services geared to developmental needs, electricity is a critical input (Samanta and Sundaram, 1983). The impact of access to electricity by rural households is much broader which includes increased productivity in agriculture and labour, improvement in the delivery of health and education, access to communications (radio, telephone, television, mobile telephone), improved lighting after sunset, the use of time and energy-saving mills, motors, and pumps, and increased public safety, outdoor lighting, etc. (Kalra et al., 2007). Thus, it would provide rural life with a dynamism that reinforces the process of rural (economic) transformation from traditional arena to advancement in which rural industrial sector would play a vital role. Samanta and Sundaram (1983) argued that rural electrification, among other beneficial impacts, increases agricultural and industrial productivity, creates more jobs (leading to employment intensity), and reduces rural-urban migration (see also Cecelski, 1982). But, one has to keep in mind that the benefits derived from electricity in villages needs to be cautiously examined because, as UNDP (2000) argued, in many developing countries even where grid electricity is available, supply is often erratic and of poor quality (although electricity supply quality is an important issue, due to data limitations this aspect is not captured in this study).

b)   **SII**: Social Infrastructure Index
       <u>**Hypothesis**</u>: SII is positively related with RURR.
       According to Lucas (1993), the main engine of growth stems from the accumulation of human capital—in other word, knowledge—and the main source of differences in living standards among nations becomes apparent through a difference in human capital. On this score, India suffers from substantial deficiency, especially in rural sector. High levels of illiteracy in rural India have been considered to be one of the inhibitive factors of growth of vibrant rural non-farm sector. In the rural areas, due to lack of education labor has either been stagnant in agriculture, or moving to casual work occupations in the distress-driven non-farm sector (Planning Commission, 2000). Since the rural non-farm activities do not include capital-intensive, sophisticated, industries, or service industries like information technology, a country which desires to develop its rural industrial sector to accommodate a large number of rural unemployed or under-employed masses in the workforce must concentrate in primary and secondary education in the rural regions. Islam (1997) argues that literacy enhances the productivity of the workforce and also enables them to apply their skills acquired through training. He emphasizes secondary education in stimulating entrepreneurial capacity of the rural talents, and convincingly argues that, in developing countries, an entrepreneur with an elementary education can expect to earn an income 41 percent higher than one with no education at all.

       It is not just education that matters. Health care is an important aspect of rural development through rural industrialisation because the applicability of human capability, earned through education and training, is conceived to be routed through better health (Tewari et al. 2005) and, for that, adequate health care services are a prerequisite. However, in most developing countries including India, rural health care services are far below the commendable stage. Largely, the quality health care services in India are concentrated in urban areas. The qualitative aspects of the small rural health care centres are in poor condition in many parts of the country. Thus, the rural stakeholders would share greater expectations from the urban health centres and thus want them to perform well (Bloom, 2001). Accordingly, the demand for urban health care services is seen to be much higher than that of rural hospitals. In this connection, Doeksen et al. (1997) argue that large urban medical facilities often receive a much higher proportion of patients from outside the urban areas.

c)   **NRCB**
       <u>**Hypothesis**</u>: Greater no. of commercial banks per lakh population in rural areas leaves scopes for greater access of rural people to financial institutions, which might augment greater rural economic activities, and that induces rural in-migration which may further lead to higher scopes for rural-urbanisation. Therefore, there will be a negative relationship between NRCB and RURR.

       In order to get out of poverty people need to transform their production and employment activities (for example, from traditional farming to commercial farming, or from farm to non-farm activities), in which access to finance has been argued to be playing a critical role (Banerjee and Newman 1993; Aghion and Bolton 1997; Banerjee, 2001). As it is argued, whether or not a region is able to exploit growth opportunities partly depends on its financial systems (better or otherwise) (Schumpeter, 1934; Gerschenkron 1962; Greenwood and Jovanovic, 1990; Bencivenga and Smith, 1991). Burgess and Pande (2003) stated that the expansion program of branch of commercial banks in India has been able to set a strong instance of the state-led rural finance

programs. But, the extents of coverage by these branches in the backward areas and its possible effects in rural economic development, in general, and the growth of non-agricultural activities, in particular, still need to be re-examined (IFAD, undated).

d)   TBLU

Hypothesis: The higher ratio indicates lower level of rural urbanisation as well as lower level of rural industrialisation Thus the probability of urban migration will go up. Therefore, there is a positive relation between this variable and the RURR.

As discussed earlier, the process of urbanisation in India is not only an endorsement of population concentration in a particular area but also involves the criterion of non-farm employment of male workforce. Thus, low level of urbanisation, defined by low level of non-farm employment, in a densely populated geography supports the proposition as why a section of potential workforce would migrate to urban sectors in search of employment and income. In the respect, Jha (2006: 2) argues that "[t]he small base of the rural non-farm sector located within a large rural population is in fact indicative of the employment potential in the rural non-farm sector". As he continues, a comparative account of the non-farm sector between the rural and the urban sector shows significant disparity in terms of its size and growth, causing migration from rural to urban sector. Thus, a region which is experiencing overall slow-growth but lopsided urban growth would tend to witness "push" rather than "pull" urbanisation, resulting urbanisation and growth from agricultural stress (Annez and Buckley, 2008). To minimize this stress, the Chinese government set up township and village enterprises (TVEs) in rural areas where the administrative levels are township and village (Yeh et al., 2011). Very limited number of studies have shed light on this issue from the perspectives of Indian development process. So, it becomes imperative to examine the effects of level of rural urbanisation at district level in West Bengal on rural-to-urban migration.

e)   PCIPP

Hypothesis: This is considered to be a substantially urban-biased variable. Thus, PCIPP and RURR are positively related (PCIPP is an indicator of urban physical infrastructure of a district. So, the higher the value of PCIPP, the higher the possibility of rural to urban migration.)

The secondary data we have used relating to CIPP consumption of electricity represent district level information, not rural area specific information. The elements of this variable include commercial, industrial, public lighting and public works which are assumed to have a strong urban focus in our present rural-urban differentials. Increase in the consumption of electricity in commercial and industrial activities (in both private and public sectors) and public lighting and public works in a region has a reflection of growth of economic activities. This in turn attracts people of the less-developed regions to move in search of employment and income. Besides, some other aspects of this issue need to be kept in view. Public investments in urban basic amenities on the one hand and development of economic activities on the other are often seen to be reinforcing each other. More specifically, an increase in the level of basic economic infrastructure facilities through higher investment in public works will instigate private commercial activities to grow which, in turn, will generate demand for greater investments in infrastructure (Hazell, Haggblade, and Reardon 2007, 95-7; Liedholm 2007, 104; Banerjee 2005; Dutta 2002; Rutten 1995). Hence, the regions/districts that are economically under-developed or traditionally rural in nature entail investments from public sector or in the form of public-

private partnerships in the small growth centres in order to stimulate non-farm economic activities.

5.1.2   Model 2

Dependent variable

a)   PPRSS: The ***pressure*** of rural working population on rural small scale sector (measured by the no. of rural workforce per rural small scale unit)

Higher value of this variable implies greater pressure on rural workforce to find avenues of non-farm employment. This pressure can be reduced through the promotion of successful rural industrialisation by way of facilitating the transfer of rural workforce from pastoral farm sector to non-farm sector.

5.2   CONCEPTUAL FORMULATION OF THE DEPENDENT VARIABLE

For the sake of simplicity, we classify the entire rural workforce into three categories, C1, C2 and C3 as follows:

C_1 => engaged exclusively in agricultural activities;

C_2 => engaged partly in agricultural and partly in non-agricultural activities; and

C_3 => engaged exclusively in non-agricultural activities.

Let

x = Total number of rural small enterprise

N = Total rural workforce $= n_1 + n_2 + n_3$, where

n_1 = Number of workforce engaged in C_1

n_2 = Number of workforce engaged in C_2

n_3 = Number of workforce engaged in C_3

Now, the pressure of rural working population on rural small scale sector is expressed as $\dfrac{N}{x}$.

$$\frac{N}{x} = \frac{n_1 + n_2 + n_3}{x} = \frac{n_1}{x} + \frac{n_2}{x} + \frac{n_3}{x} \qquad \text{---} \qquad (1)$$

We assume that the employment capacity of the rural non-farm sector has increased (either in the form of expansion or in number or both) as a result of growth in this sector. Let us now express the non-farm sector with its new capacity as x_1 (where $x_1 \geq x$). We assume that total number of rural workforce remains unchanged and there has not been any rural-to-large-urban migration of rural workforce. Then, there will be some redistribution of employment within the above-mentioned workforce categories. Again, let

n_1^* = number of workers left from C1 to C3 after redistribution. Note that $0 \leq n_1^* < n_1$ depending on their operational land holding size.

n_2^* = number of workforce left from C2 to C3 and $n_2^* \leq n_2$ depending on their skill and opportunity to join in C3

n_3^* = number of workforce shifted to C3 from C1 and C2 after redistribution of workforce.

Hence, $n_3^* = n_1^* + n_2^*$ pressure of workforce has absorbed in the non-farm sector.

Independent variables

a)   **RURIND**

Hypothesis: This variable is an indicator of the degree of rural industrialisation If the degree of rural industrialisation increases, the pressure of rural working population on rural small scale sector (i.e. the dependent variable) will decrease. Hence, there should be a clear-cut inverse relationship between these two variables. One can argue that such relationship between these two variables is inherent in their respective formations. In spite of that we have considered RURIND as an independent variable in order to validate the concept of our dependent variable (i.e. PPRSS) as a manifestation of the employment pressure on traditional sector.

b)   **SVTT**

Hypothesis: The higher value of this variable implies increased scope for vocational/technical training which in turn will increase the scope of non-farm activities in semi-urban and rural areas. This will enhance the scope for dispersed urbanisation and rural industrialisation The issue involves two facets. Firstly, together with lack of technical skills, there is little incentive for rural firms to invest in technology, leading to low levels of labor productivity in the rural manufacturing sector compared to urban manufacturing (Chadha, 2003). So, higher training will generate greater scopes for rural entrepreneurship. Secondly, as a region/district experiences rural industrialisation the process creates employment opportunities for the upcoming skilled/semi-skilled persons; and thus this reduces the number of rural workforce per unit of rural small scale enterprise. This phenomenon, as we would like to emphasise, is nothing but a transfer of rural work force from traditional sector to non-farm sector. Thus, we hypothesize that if the scope for vocational and similar type of training/education increases and if at the same time rural industrial sector develops, the pressure of rural workforce on rural small scale sector will reduce.

According to Ra and Shim (2009), growth-induced industrialisation often driven by higher levels of saving and investment, as experienced in the Korean economy during 1960-90, may create demands for skilled human resources, which should be substantiated by the intervention of government through providing vocational education and training. They argued that "[t]he logic was not the other way around; i.e., it was not the government interventions in training market that generated demands for human resources and created job opportunities" (p. 70). However, at the same time they argued that in those countries with a weak educational development and industrial base, greater emphasis should be given to basic education rather than vocational education and training. On the contrary, Jain (2005) argued that non-formal education generates scopes for the less educated section, particularly the rural youth, to acquire skills needed in the non-farm activities. For example, an automobile factory in a poor economy may not require semi-skilled persons, but the intermediate sectors located in the interface of the traditional and the modern sectors and rural agro-processing sectors may require semi-skilled persons at the early stages of development. Due to huge rural-urban differentials, the fruits of liberalization may not often reach the backward regions of an industrialising

economy. Growth driven by higher levels of saving-investment mechanism may not be seen to be effective in generating industrial/entrepreneurial activities in the regions dominated by pastoral folk. In such a situation, government intervention is a pre-requisite -- either as an independent actor or jointly with private sector -- if private sector independently fails to meet the needed requirements. Keeping in view the learning environment, working environment and the practical needs of the rural youth, the potential usefulness of non-formal education as well as vocational training from the perspectives of creating employment opportunities is yet to be properly understood (Jain, 2005). Non-formal education stimulates "learning environment in response to practical needs … [of] the illiterates" (p. 224).

c)   Electric
   Hypothesis: The higher the proportion of households having access to electricity, the lower the pressure of rural working population on rural small scale sector via the scope for generation of additional household economic activities.

   The energy problems of the developing countries are realised to be serious and widespread. Without efficient energy, people's efforts remain underutilized in both household and productive activities (Barnes and Floor, 1996). In villages of developing world, household electricity consumption for lighting purposes has received primary importance, although a growing preference has also been observed for the same for fan, television, music systems, and other allied items (Das, 2006). With the increasing use of these items in village society, related trading and service (e.g. repair, assembling, etc.) activities are intended to grow as a response to such new demands in the local non-farm sector. Such development is facilitated by availability of additional working hours at night when people remain generally free from farm work and can devote time to non-farm work.

d)   RPOC
   Hypothesis: Increase in RPOC indicates growth in rural industrial activities which in turn is expected to lower workforce pressure on existing volume of rural economic activities -- which is predominantly dominated by agriculture -- by opening up new avenues of employment in the domain of rural non-farm activities.

   Credit plays critical role in the development of rural small enterprise sector and may guarantee the takeoff of new entrepreneurial ventures, thereby contributing to growth and job creation. Generally, formal institutional credit delivery in India is largely administered in terms of stringent criteria such as, among other, prior assessment of financial strength of the borrower to repay. In this context, Mukherjee and Zhang (2007) argue that although India has a rural credit network, it severely suffers from inadequate delivery. Boateng (2011) argues that banks are generally averse to providing funds to small enterprises without instruments that reduce their lending risks, although there are banks that seldom venture to provide mostly short-term working capital loans to some low-growth enterprises. However, access of rural small enterprise sector to institutional credit primarily indicates that enterprises that qualify to borrow credit from formal institutions have some growth potentials in terms of their existing financial strength. Thus, this variable reflects on the growth potential of the rural small enterprises.

e)   **AII**

     <u>**Hypothesis**</u>: As agricultural infrastructure level increases the pressure of rural workforce on small enterprises decreases, via the growth in non-farm activities not only at the agriculture/non-agriculture interface but also at the exclusive-non-farm domain.

     Proper agricultural infrastructure would not only strengthen agriculture to diversify (which is urgently required for this sector to find sustainable growth trajectory), but would also help the rural non-farm sector to grow rapidly. Higher level of R & D and availability of improved inputs/technology, as it is understood, would never undermine the necessity of water in the agriculture sector including its diversification. Growth and diversification of agriculture augments the level of income in the agriculture sector and simultaneously generates demand for non-farm goods and services. In this regard, as Mellor and Lele (1973) found, rural consumption linkages include spending by farm families on locally produced consumer goods and services. Their study on "green revolution India determined that higher-income small farmers spent about half of their incremental farm income on non-farm goods and services and another third on perishable agricultural commodities such as milk, fruit, and vegetables, thus generating strong demand linkages for locally supplied goods and services" (cited in Haggblade et al. 2007: 143). The importance of growth of such types of agricultural activities is two folded. One, it would sustain agricultural growth and, two, it would open up new avenues for the rural non-farm activities at the agriculture/non-agriculture interface. For this development, there is enormous importance of establishing infrastructure like storages, especially for the perishable agro-produces. If proper rural infrastructure can be built there is enormous possibility of simultaneous development of different kinds of village-based economic activities ranging from diversified agricultural production, agro-processing enterprises, to non-farm manufacturing as well as service industries. Note that there is an in-built mechanism of forward and backward linkages. Increased non-farm activities would provide sustainability to agricultural growth. In the version of Reardon et al. (1994), "[c]ertainly production linkages cut both ways. The establishment of rural canneries can stimulate on farm production of tomatoes, fruits, and other perishables" (cited in Haggblade et al. 2007: 144-5). It is revealed from the above arguments that augmentation of agricultural infrastructure would generate scope for labour absorption through opening up of the employment opportunities in the agriculture/non-agriculture interface.

5.3   DATA, MODELS AND RESULTS

We have used SPSS software to estimate the models as conceptualized above. For the estimation, OLS method has been used. Table 5.1 presents the detailed descriptions of the variables along with their sources. Besides, the descriptive statistics of the variables of two different models have been presented in Table 5.2. Currently, there are 19 districts in West Bengal, out of which we have taken 17 districts as units of observation. Note that Kolkata being the sole metropolitan district has been excluded from our conceptualization, since the rural part is totally missing in this district. For the dependent variable of our first model, i.e. rural-urbanisation model, the latest data has been available from the 2001 Census (also, the 2001 Census data has been used for many other variables that have been expressed in terms of "per capita", "per lakh population", "per 10,000 population" etc.). On the other hand, the district of Midnapore has been divided into two districts, namely Purba Medinipur and Paschim Medinipur, in 2002. Thus, for the sake of simplicity, we have considered the undivided district for all other variables, irrespective of whether the data has been available in the form of undivided nature or divided nature.

Thus, the total number of districts in our study has come down to 17 as the total number of observation. Another important thing to be noted here is that, for the selection of the year of data for all other variables, the closeness to 2001 has been the only criterion. Such closeness aspect has been taken care of in our second model as well. We now interpret the results of the model estimations.

TABLE 5.1
Description of the Variables

Variable	Measurement	Variable name	Source of data
Rural-Urbanisation Model			
Dependent variable			
Migration (for employment and income reason)	Ratio of rural-to-urban migration to rural-to-rural migration	RURR	Census of India, 2001 (Note: this source has been used wherever we have referred to population data in the following rows)
Independent variable			
Physical infrastructure index	Composite index that consists of two dimension indexes (1) rural road index [measured by rural surface road length per sq.km. (maintained by PWD and panchayats including zilla parishad)];* and (2) rural household electric lighting index (measured by percentage of rural households using electricity for lighting)	PII	For road: Public Works (Road) Department, Government of West Bengal, 2001-02; For electric lighting: Census of India, 2001
Social infrastructure index	Composite index which consists of four dimension indexes (1) health index measured by availability of beds per 10,000 population; (2) number of doctor per lakh population;** (3) education index measured by teacher-student (class VI-X) ratio and number of high schools); and (4) number of high school	SII	For hospital bed and doctor: State Bureau of Health Intelligence, Government of West Bengal, 2001; For school, teacher and student: Department School Education, Government of West Bengal, 2003-04
Commercial bank in rural area	Number of commercial banks in rural areas per lakh rural population	NRCB	Bureau of Applied Economics and Statistics, Government of West Bengal, 2001
Degree of low level of urbanisation	Ratio of number of administrative blocks having urbanisation of 10 per cent or below to total number of administrative blocks	TBLU	Census of India, 2001

Consumption of electricity for commercial, Industrial, Public lighting and public works purposes	Per capita consumption of electricity for commercial, Industrial, Public lighting and public works purposes	PCIPP	Divisional Engineer, West Bengal State Electricity Board (O & M), 2005-06
Rural-Industrialisation Model			
Dependent variable			
Pressure of total rural workforce on rural non-agriculture (i.e. need for rural industrialisation)	Ratio of number of rural workforce to number of rural small enterprises	PPRSS	For number of rural small enterprise: Third Small-Scale Industry Census, 2001-02; For number of rural workforce: Census of India, 2001
Independent variable			
Rural industrialisation	Number of rural small enterprises per 10,000 rural population	RURIND	For number of rural small enterprise: Third Small-Scale Industry Census, 2001-02
Scope of vocational-cum-technical training	Number of engineering and vocational institute per lakh population (15-34 age groups) in a district	SVTT	District Statistical Handbook, Govt. of West Bengal
Rural household electricity access	Per cent of rural household using electricity	Electric	Census of India, 2001
Rural per capita outstanding credit for artisan small-scale enterprises	Outstanding credit provided to artisans and small-scale enterprises divided by total rural population	RPOC	For credit: Reserve Bank of India
Agricultural Infrastructure Index	Composite index which consists of (a) Govt. canal irrigation index (i.e. per cent of govt. canal irrigated area in gross irrigated area), (b) cold storage index (cold storage capacity (in ton) per '000 ha), and (c) warehouse index (warehouse capacity (in metric ton) available per 1000 ha of food grains and oilseed produces).	AII	For canal irrigation: District Statistical Handbook, Govt. of West Bengal; For cold storage and warehouse: Directorate of Agricultural Marketing, Govt. of West Bengal

Note: *The descriptions presented in the measurement column of this table indicate district-level information/data. However, the term 'rural' has been specifically mentioned wherever we have taken exclusively rural information/data for the districts;*
* PWD stands for Public Works Department of the state government. Panchayat is a local government at village level, whereas zilla parishad represents similar body at district level;
**10 lakh = 1 million.

TABLE 5.2
Descriptive Statistics of the Variables

	N	Minimum	Maximum	Mean	Std. Deviation
RURR	17	0.030	1.750	0.36529	0.482028
PCIPP	17	1.3353	11.8093	3.375867	2.7270098
NRCB	17	2.8049	5.1282	4.016648	0.7797450
TBLU	17	0.6429	1.0000	0.877404	0.1165570
SII	17	0.2480	0.7064	0.451180	0.1237826
PII	17	0.1723	0.8201	0.414908	0.1917596
PPRSS	17	23.5000	131.6900	63.778235	29.5594660
RURIND	17	28	155	72.83	31.963
SVTT	17	0.2507	3.2963	1.136930	0.7579802
RPOC	17	37.72	644.66	161.4074	162.31976
AII	17	0.0000	0.7978	0.231047	0.2478337
Electric	17	0.1637	1.0000	0.470039	0.2347916
Valid N (list-wise)	17				

5.4   INTERPRETATION OF RURAL-URBANISATION MODEL
   (i.e. RURR MODEL)

We have found all the variables of our RURR model as significant, two (i.e. TBLU and SII) of which are highly significant. The R-squared value of the model is 0.822 which demonstrates that the data has fit the model extremely well. Let us now analyse the results in terms of individual variables (Table 5.3).

TABLE 5.3
Results of RURR Model Estimation

	Coefficient	Std. Error	t-value	Sig.
Constant	2.522	0.938	2.689	0.021
PCIPP	0.055	0.028	1.961	0.076
NRCB	0.302	0.129	2.338	0.039
TBLU	-2.929	0.917	-3.194	0.009
SII	-3.265	1.003	-3.255	0.008
PII	1.175	0.512	2.296	0.042
R^2	0.822			
Adjusted R^2	0.741			

a)   PCIPP

As shown in Table 5.3, PCIPP appears to be a significant variable (at 10 per cent level) and positively related with RURR. So, there is no reason to reject our hypothesis. This implies that rural labour-force would tend to move to urban areas if urban commercial as well as industrial activities grow and urban public infrastructural investments are emphasized. To restrain such movement of labour-force, similar investments are required to develop decentralised small urban pockets. Although, to develop urban pockets in rural areas, initiatives from both public and private sectors foment a reinforcing mechanism, at the initial stage public sector initiatives are considered to be a priority. Thus, to encourage rural labour-force to find local employment, public infrastructural investments need to be made in the rural sector in order to develop rural markets and local small urban centres / growth centres.

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b)   NRCB

As it appears, NRCB is a significant variable (at 5 per cent level) and positively related with RURR. According to the result, our hypothesis has been rejected. This implies that in spite of increase in the number of commercial banks in rural areas, rural labour-force has not been attracted to come into rural areas. One possible inference from this result could be drawn as follows: Increase in the number of commercial banks does not necessarily imply liberal credit disbursement and thus the scope of creation of new employment opportunities -- via the growth of rural non-farm sector -- has been restrained.

c)   TBLU

TBLU has come out as a statistically highly significant variable (at 1 per cent level), having negative relationship with RURR. This indicates that our hypothesis has been rejected. This result bears highly critical implication to the context of the present study. With the increase in number of administrative blocks having 10 per cent or even lower level of urbanization, the likelihood of rural-to-urban migration goes down. The objective of this study is to seek policy prescriptions in favour of rural-urbanisation and thus to provide employment opportunities within the administrative blocks which in turn, it is expected, would restrict rural-to-urban migration. The result of this variable apparently supports our simple objective, reflecting on less likelihood of people to migrate to urban areas, but in reality it has happened at the cost of rural-urbanisation, which does not corroborate our central objective. From this perspective, this result, however, entails further elaboration, drawing on the situation related to the grass-root realities of the study area. A district having critically low level of urbanization suffers from inadequate level of road connectivity, communication facilities, information flows, physical as well as social infrastructure, institutional shortfalls, and so on. All this restrains rural population -- who were bogged down in their traditional, pastoral, agricultural occupations -- from accessing to larger options of non-agricultural employment avenues.

d)   SII

This variable has been found to be statistically highly significant and is negatively related with the dependent variable. The sign of the coefficient of this variable shows that our hypothesis has been rejected. This again means that if SII increases then the likelihood of rural people to migrate to urban areas decreases. This result requires further elaboration. Social infrastructure, as has been captured through the variable called SII in our model, comprises two crucial social parameters like health and education. These parameters have direct impact on human capability which heavily draws on the qualitative aspects of health and education, not just on the quantitative dimensions. Moreover, if the highest-ranked district, as seen in the present case study (see Appendix 5B), itself represents a very low social infrastructure level, the other ranks are believed to illustrate even poorer conditions. Thus, overall low level of human capability in terms of poor quality of health and education (though sometimes it may reflect on relatively high level of quantitative infrastructure) will have negative reflection on the overall economy through productivity consequences. These consequences are often dependent on growth of economic activities in the concerned region. If a region is stuck into low level of economic activities then productivity consequences -- driven by mere quantitatively enhanced health and

education infrastructure -- would most probably fail to be adequately generated and thus would not attract labour-force to migrate to urban places.

e)   PII

PII has been found to be positively related with RURR and the variable is significant at 5 per cent level. The regression result shows that if the level of rural physical infrastructure increases then the likelihood of rural people to migrate to urban areas would increase. This does not support our hypothesis. It was expected that a vibrant rural industrial sector in the small urban centres would create adequate backward linkage effect in the farm sector in rural areas, which would create greater opportunities in the farm as well as non-farm sector in villages. But, in our study area rural economic activities in villages have not been generated in the absence of necessary backward linkage mechanism. Thus rural labour-force, having been forced by low-income farm sector, wanted to find alternative sources of employment elsewhere. A flourishing alternative that was open to them was urban construction sector (and some related service industries). On the other hand, improved rural road connectivity has facilitated the higher degree of labour mobility and thus the rural labour moved to urban areas. Besides, access to domestic electricity implies an increase in the level of income of the household and that might also have ignited their desires to adopt more urban-like consumption pattern (Papola and Misra, 1980: 1745). Consequently, to fulfill their desires, they looked for work elsewhere, mostly available in urban areas. Thus, let us conclude that the greater the rural physical infrastructure, the greater the likelihood that rural people migrate to urban centres in search of better employment and income.

5.5   INTERPRETATION OF RURAL-INDUSTRIALISATION MODEL (I.E. PPRSS MODEL)

Out of five variables, four have been found as significant in this model. The R-squared value of the model is 0.872 which demonstrates that the data has fit the model extremely well. Let us now analyse the results in terms of individual variables (Table 5.4).

TABLE 5.4
Results of PPRSS Model Estimation

Variable	Coefficient	Std. Error	t-value	Sig.
Constant	72.109	15.899	4.535	0.001
RURIND	-0.516	0.126	-4.084	0.002
SVTT	11.280	5.002	2.255	0.045
Electric	59.461	22.807	2.607	0.024
RPOC	-0.048	0.026	-1.847	0.092
AII	-16.312	16.145	-1.010	0.334
R^2	0.872			
Adjusted R^2	0.814			

a)   RURIND

As our regression result shows, RURIND has been found to be negatively related with PPRSS at 1 per cent significance level. The result shows that our hypothesis has been confirmed.

b)   SVTT

This variable has been significant at 5 per cent level and is positively related with PPRSS (dependent variable). This indicates that our hypothesis has been rejected. The result bears significant implication: As the scope for vocational and similar type of training/education increases, the pressure of rural workforce on rural small scale sector also increases. This has happened because the rural industrial sector did not grow satisfactorily, meaning that the potential rural labour-force that has been produced by such types of institutes over the years did not find placement in local regions.

c)   Electric

This variable has been found to be positively related with the dependent variable (at 5 per cent level). The result implies that our hypothesis has been rejected. This further indicates that increase in rural household electricity consumption has failed to impact on rural non-farm activities due to quantitative as well as qualitative (both in terms of adequate need of the household) constraints of supply of electricity. This phenomenon characterises the regional development pattern as urban-biased, which, as said earlier, is primarily reflected through the growth of urban construction and allied industry and its rural-to-urban migration consequences, leaving rural areas with weak backward linkages generated from the present unsustainable urban explosion.

d)   RPOC

In the model regression, RPOC has been found to be negatively related with PPRSS at 10 per cent significance level. The result shows that our hypothesis has been confirmed. This establishes the fact that credit has been given to enterprises that have grown and thus have reduced the pressure on the rural traditional economy as indicated above. In other words, as it appears, only growth-induced small enterprises have access to formal credit. Among the rest, many might be starving from capital and thus termed as distress-driven enterprises which do not have access to formal, institutional credit. This restricts the spread of the non-farm activities that have future growth potentials among the distress-driven enterprises according to their present financial status. However, this requires further elaboration. How come distress-driven, capital-starving, small enterprises have "growth potentials"? The simple answer is: In case of rural "small" enterprises, the role of other forms of capital (e.g. social capital such as personal goodwill, personal networks, etc.) is embedded in its "smallness". For example, a new entrepreneur who wants to start a large firm would find it extremely difficult to mobilize physical capital using his personal goodwill, whereas a small entrepreneur who has some "personal qualities" can mobilize initial capital from acquaintances to start a business and can then even grow. Taking into consideration these aspects, there is a need to formulate new credit policy to include potential but capital-starved small entrepreneurs who have future growth

potentials and, in this regard, the state has a role to play to ensure growth in the backward regions. We would further elaborate this policy need in the conclusion of this chapter.

e)   AII

This variable has been found to be insignificant.

5.6   POLICY RECOMMENDATIONS AND CONCLUSIONS

In this chapter, our objective was to identify the causal factors behind rural-to-urban migration (i.e. rural-urbanisation) and diffusion of pressure of rural workforce from traditional sector (i.e. rural industrialization). In our conceptual framework, the variables that have been conceived as important for the first model include physical infrastructure (captured through road index and rural household electric lighting index); social infrastructure (captured through health infrastructure index and educational infrastructure index); rural institutional financial infrastructure; existing district-wise rural-urbanization level; and district-wise per capital consumption of electricity in commercial, industrial, and public works. Interestingly, all the variables in the model have appeared to be significant in the regression result. From the perspectives of policy implications, the findings of the several of our variables (such as PII, SII, TBLU, and PCIPP) suggest that greater public investments in physical and social infrastructure are required for developing small urban pockets in rural areas. Besides, increase in number of commercial banks in rural areas is not able to promote rural industrialization and thus fails to check rural-to-urban migration, unless credit delivery system is improved.

      Next, the conceptualization of our rural-industrialisation model, as described above, seeks to capture the influence of technical education, household electricity consumption, credit disbursement to rural enterprises, and agriculture infrastructure on diffusion of workforce pressure from farm sector to non-farm sector. The result of the variable of vocation training institutes suggests that, to make use of potential technical labour-force generated from such types of training institutes, the government needs to emphasise creation of non-farm employment in small urban satellites through rural industrialization programmes as well as other helpful mechanisms (for example, by facilitating creation of new avenues through promoting linkages between urban economy and rural economy; and new cluster development), otherwise either rural labour-force of this type may remain underutilized in the traditional sector or find other non-suitable employment. Similarly, the results of variable, namely rural household consumption of electricity, suggests that, in order to generate demand consequences (i.e. demand for new non-farm goods and services which have consumption linkages with electricity, as described above) of its increase, the government needs to ensure its quantitative as well as qualitative aspects. As regards credit disbursement variable, our result simply confirms the proposition that small enterprises that have growth potential are creditworthy (or vice versa). Such empirical support, on the other hand, implies that enterprises of low financial capacity (in terms of their existing asset/wealth) are not creditworthy. To accentuate the idea of inclusive growth, the government has to adopt an innovative credit policy (considering necessary insurance mechanism to cover the repayment failure possibility in order to reduce the risks of banks) for the enterprises that have future growth potentials in some other sense (for example, entrepreneur's credit-worthiness should not just be evaluated on the basis of one's repayment 'capacity' in terms of one's existing wealth, but his 'capability' of future growth in terms of the other criteria like social capital should also be taken into consideration).

In sum, we conclude that a successful rural industrialization programme in West Bengal would need to pay proper attention in rural physical and social infrastructure, and credit delivery system in order to facilitate the rural transformation process from traditional domain to growth trajectory. Rural infrastructure would play very important role in developing numerous small urban pockets and rural non-farm sector in those urban pockets would bring in changes in the rural economy through various linkages with the farm sector.

APPENDIX 5A
Rural Physical Infrastructure Index (district-wise)

District	Surface road length per sq. km.	% of rural household using electricity (2001)	Road index	Rural HH Electricity Consumption Index	Physical Infrastructure Index
Bankura	0.27	24.01	0.134	0.534	0.267
Birbhum	0.52	23.59	0.260	0.525	0.369
Burdwan	1.13	26.08	0.560	0.580	0.570
Coochbehar	0.36	7.36	0.181	0.164	0.172
Dakshin Dinajpur	0.55	12.98	0.272	0.289	0.280
Darjeeling	0.53	42.11	0.263	0.936	0.496
Hooghly	1.22	44.97	0.608	1.000	0.780
Howrah	1.95	31.17	0.970	0.693	0.820
Jalpaiguri	0.45	23.48	0.224	0.522	0.342
Maldah	0.38	14.37	0.188	0.320	0.245
Purba Medinipur	2.01	9.21	1.000	0.205	0.453
Paschim Medinipur	0.90	11.81	0.450	0.263	0.344
Medinipur	1.24	15.94	0.618	0.354	0.468
Murshidabad	0.75	13.71	0.372	0.305	0.337
Nadia	1.29	20.3	0.639	0.451	0.537
North 24-Parganas	1.47	20.77	0.729	0.462	0.580
Purulia	0.50	13.61	0.248	0.303	0.274
South 24-Parganas	0.51	16.81	0.254	0.374	0.267
Uttar Dinajpur	0.48	8.08	0.240	0.180	0.369

APPENDIX 5B
Social Infrastructure Index

District	Health indicator		Education indicator		Health Index		Education Index		Social Infrastructure Index
	Availability of beds per 10,000 population (2001)	No. of Doctors per lakh population	Teacher-student (T-S) ratio (VI-X)	No. of high schools	BED Index	Doctor Index	T-S ratio Index	School Index	
Bankura	8.95	8.14	0.015355	453	0.520991	0.426813	0.995570525	0.321505	0.517
Birbhum	7.86	8.42	0.015262	402	0.457752	0.441476	0.989517963	0.285309	0.489
Burdwan	10.02	13.82	0.014854	862	0.583381	0.724349	0.963119062	0.611781	0.706
Coochbehar	5.65	7.10	0.010133	278	0.328893	0.372075	0.657014797	0.197303	0.355
Dakshin Dinajpur	5.35	5.92	0.014686	161	0.311512	0.310314	0.952199	0.114265	0.320
Darjeeling	17.17	19.08	0.014345	205	1.000019	0.999902	0.930095179	0.145493	0.607
Hooghly	7.47	8.05	0.010894	493	0.435251	0.422033	0.706313264	0.349894	0.462
Howrah	9.53	12.29	0.01172	546	0.555002	0.643929	0.759915076	0.387509	0.570
Jalpaiguri	12.31	9.82	0.010899	290	0.717146	0.514682	0.706657662	0.20582	0.481
Maldah	3.48	3.77	0.014452	323	0.202664	0.197508	0.937011631	0.229241	0.305
Purba Medinipur	2.99	4.55	0.015415	665	0.174036	0.238481	0.999480457	0.471966	0.374
Paschim Medinipur	6.62	8.95	0.015423	744	0.385328	0.469269	1	0.528034	0.556
Murshidabad	4.94	4.41	0.010224	499	0.287802	0.231386	0.662880126	0.354152	0.354
Nadia	11.37	7.62	0.010416	455	0.662241	0.399499	0.675369432	0.322924	0.490
North 24-Parganas	4.82	5.94	0.006678	963	0.280505	0.311499	0.432990547	0.683463	0.401
Purulia	8.93	8.67	0.014692	333	0.520068	0.454576	0.952570796	0.236338	0.480
South 24-Parganas	2.32	3.06	0.013337	771	0.134921	0.160116	0.864734363	0.547197	0.318
Uttar Dinajpur	2.95	4.75	0.01	192	0.171971	0.248984	0.648369866	0.136267	0.248

Source: *State Bureau of Health Intelligence; Directorate of School Education, Govt. of West Bengal; and Census of India (2001)*

APPENDIX 5C
Agricultural Infrastructure Index

District	Govt. irrigation Infrastructure Indicator	Agro-storage Infrastructure Indicator		Agricultural Infrastructure Index	Agro-storage Index
	Govt. canal irrigation index	Cold storage Index	Warehouse Index		
Bankura	0.6475	0.6382	0.2811	0.4880	0.4236
Birbhum	0.7071	0.1972	0.2514	0.3273	0.2226
Burdwan	1.0000	0.9971	0.5093	0.7978	0.7126
Coochbehar	0.0254	0.1791	0.2841	0.1089	0.2256
Dakshin Dinajpur	0.0000	0.0000	0.4636	0.0000	0.0000
Darjeeling	0.6312	0.0012	0.6833	0.0811	0.0291
Hooghly	0.3237	1.0000	0.6339	0.5898	0.7962
Howrah	0.4038	0.2931	0.8880	0.4719	0.5102
Jalpaiguri	0.7629	0.3783	0.2001	0.3866	0.2752
Maldah	0.0000	0.0457	0.2013	0.0000	0.0959
Purba Medinipur	0.1386	0.0140	0.5019	0.0990	0.0837
Paschim Medinipur	0.4169	0.6721	0.2191	0.3944	0.3837
Murshidabad	0.2332	0.0471	0.2911	0.1473	0.1171
Nadia	0.0000	0.0151	0.2628	0.0000	0.0630
North 24-Parganas	0.0000	0.0425	1.0000	0.0000	0.2062
Purulia	0.5177	0.0000	0.0922	0.0000	0.0000
South 24-Parganas	0.2558	0.0058	0.1098	0.0546	0.0252
Uttar Dinajpur	0.0528	0.1160	0.2125	0.1092	0.1570

Source: District Statistical Handbook, Bureau of Applied Economics and Statistics, Govt. of West Bengal; Directorate of Agriculture, Govt. of West Bengal; Directorate of Agricultural Marketing, Govt. of West Bengal

CHAPTER 6

CONCLUSIONS

For the generation of employment and income opportunities in the rural areas, diversified occupations are to be provided in those areas. Our basic proposition is that this could be achieved by way of creating small urban pockets in the rural areas (which we termed as dispersed urbanisation). Once this could be done successfully then the chronic problems like poverty and unemployment could be eradicated from the grassroot and that in turn through the process of rural urban continuum would enhance social welfare of both the rural and urban sectors.

In support of our idea, we have tried to capture the limitations of the present trends of urban developments in the developing regions and the consequent adverse impact on rural farm activity and employment generation through a four-quadrant diagram (in Chapter 3). Then, we presented an alternative approach in a separate two-part diagram, representing relationship between dispersed urbanisation at district level and growth of rural non-farm activity as an engine of growth of rural. The limitations of the present development approach have been reemphasized in Chapter 4 where we observe that, due to lack of non-farm employment opportunities in rural areas, a large proportion of rural labour-force still resort to farm sector for earning a living. In the same chapter, we have observed a concentration of small enterprises in the urban areas of the more urbanized districts whereas a number of small enterprises are located in the rural areas of the less-urbanised districts. Some rural areas may have better infrastructure and induce the growth of small enterprises. Or, less-urbanised districts might have emerged as a hub of distress-driven non-agricultural economic activities.

The infrastructure variables, among some other variables, needed to be included in the approach to capture the complexities involved in the process. This has been attempted in Chapter 5, where we have examined the impacts of a number of variables on rural-urbanisation or dispersed urbanisation (captured through the propensity of rural-to-urban migration over rural-to-rural migration) and also on rural industrialisation or, conversely, rural non-industrialisation (captured through the *pressure* of rural working population on rural small scale sector). The two empirical models have been estimated on the basis of a set of hypotheses. The hypotheses of the first model include the following:

(1) Rural physical infrastructure and rural-to-urban migration are negatively related. The higher the level of rural physical infrastructure, the higher the possibility of rural-to-rural migration.

(2) We did not find social infrastructure data separately for rural West Bengal. We had to take overall district-level data. However, social infrastructure (health and education) is generally concentrated in urban areas. So, social infrastructure variable is positively related with rural-to-urban migration.

(3) Greater access of rural people to financial institutions, which might augment greater rural economic activities, would induce rural in-migration which may further lead to higher scopes for rural-urbanisation. Therefore, there will be a negative relationship between greater number of commercial banks in rural areas and the dependent variable.

(4) Lower level of rural- urbanisation indicates lower level of rural industrialisation Thus, the probability of urban in-migration will go up. Therefore, there is a positive relation between this variable and the dependent variable.

(5) We have taken a variable which represents per capita consumption of electricity for commercial, industrial, public lighting and public works purposes and which is considered to be a substantially urban-biased variable. This is an indicator of urban physical infrastructure of a district. So, the higher the value of this indicator, the higher the possibility of rural-to-urban migration. Thus, this variable and the dependent variable are positively related.

Now, the hypotheses of the second model include the following:

(1) We have taken a variable which represents the degree of rural industrialisation in a district. If the degree of rural industrialisation increases, the pressure of rural working population on rural small scale sector (i.e. the dependent variable) will decrease. Hence, there should be a clear-cut inverse relationship between these two variables.

(2) Greater scope for vocational/technical training for the rural people indicates greater scope for non-farm entrepreneurial activities and employment in semi-urban and rural areas. This will enhance the scope for dispersed urbanisation and rural industrialisation Thus, we hypothesize that if the scope for vocational and similar type of training/education increases and if at the same time rural industrial sector develops, the pressure of rural workforce on rural small scale sector will reduce.

(3) The higher the proportion of households having access to electricity, the lower the pressure of rural working population on rural small scale sector via the scope for generation of additional household economic activities.

(4) Increased level of credits towards the small-scale sector in rural areas indicates growth in rural industrial activities which in turn is expected to lower workforce pressure on existing volume of rural economic activities -- which is predominantly dominated by agriculture -- by opening up new avenues of employment in the domain of rural non-farm activities.

(5) As agricultural infrastructure level increases, the pressure of rural workforce on small enterprises decreases, via the growth in non-farm activities not only at the agriculture/non-agriculture interface but also at the exclusive-non-farm domain.

Interestingly, all the variables in the first model have appeared as significant in the estimation. The findings suggest that greater public investments in physical and social infrastructure are required for the growth of small urban pockets in rural areas. Another important finding is that increase in number of commercial banks in rural areas is not able to promote rural industrialisation and thus fails to check rural-to-urban migration, unless credit delivery system is improved.

The result of the second model is also interesting. The result of the variable of vocational training institutes suggests that, to make use of potential technical labour-force that pass out from such types of training institutes, the government needs to emphasise creation of non-farm employment in small urban satellites through rural industrialisation programmes as well as other helpful mechanisms (for example, by facilitating creation of new avenues through promoting linkages between urban economy and rural economy; and new cluster development), otherwise either rural labour-force of this type may remain underutilized in the traditional sector or find other non-suitable employment. Similarly, access to electricity of rural household suggests that, in order to generate demand consequences of its increase (described in detail in Chapter 5), the government needs to ensure its quantitative as well as qualitative aspects. As regards bank credit, the result confirms that small enterprises that have growth potential are creditworthy (or vice versa). Such empirical support, on the other hand, implies that enterprises of low financial capacity (in terms of their existing asset/wealth) are not creditworthy. To accentuate the

idea of inclusive growth, the government has to adopt an innovative credit policy (considering necessary insurance mechanism to cover the repayment failure possibility in order to reduce the risks of banks) for the enterprises that have future growth potentials in some other sense (for example, entrepreneur's credit-worthiness should not just be evaluated on the basis of one's repayment 'capacity' in terms of one's existing wealth, but his 'capability' of future growth in terms of the other criteria like social capital should also be taken into consideration).

In sum, we conclude that a successful rural industrialisation programme in West Bengal would need to pay proper attention in rural physical and social infrastructure, and credit delivery system in order to facilitate the rural transformation process from traditional domain to growth trajectory. Rural infrastructure would play very important role in developing numerous small urban pockets and rural non-farm sector in those urban pockets would bring in changes in the rural economy through various linkages with the farm sector.

References

Aghion, P. and P. Bolton (1997): "A Theory of Trickle-Down Growth and Development", *Review of Economic Studies*, Vol. 64, No. 2, pp. 151-72.

Aier, Anungla and Kithan Thungchanbeni (2011), "Problems of Rural-Urban Migration", Department of Planning and Migration, Government of Nagaland.

Amin, A. T. M. N. (2002) `Informal Sector in Asia from the Decent Work Perspective', *Employment Paper 2002/4*, International Labor Office, Geneva.

Annez, Patricia Clarke and Robert M. Buckley, (2008): "Urbanisation and Growth: Setting the Context". In *Urbanisation and Growth*, (eds.) Michael Spence, Patricia Clarke Annez, and Robert M Buckley; Washington: World Bank.

Ansari, Jamal (2009): Revisiting Urban Planning in South Asia, regional study prepared for "Revisiting Urban Planning: Global Report on Human Settlements, 2009".

Antrop, M (2004): Landscape change and the Urbanisation process in Europe. Landscape and Urban Planning 67; 9-26.

Bailey, N. & Turok, I. (2001): Central Scotland as a Polycentric Urban Region: Useful Planning Concept or Chimera? Urban Studies 38: 697-715.

Bandyopadhyay, Ritajyoti (2009): "Contentious Politics and Human Rights: Who Benefits?" In *Human Rights and Creative Leadership,* ed., The Tokyo Foundation, pp. 11-29. Tokyo: The Tokyo Foundation.

Banerjee, A. V., P. Bardhan, K. Basu, M. Datta Chaudhury, M. Ghatak, A. S. Guha, M. Majumdar, D. Mookherjee, and D. Ray. 2002. Strategy for economic reform in West

Bengal. *Economic and Political Weekly* 37:4203-18.

Banerjee, A. V. (2005): "Notes towards a Theory of Industrialisation in the Developing World". In *Development, Displacement, and Disparity: India in the Last Quarter of the Twentieth Century*, eds. N. Banerjee and S. Marjit, pp. 139-59. Hyderabad (India): Orient Longman.

Banerjee, Abhijit and Andrew Newman (1993): "Occupational Choice and the Process of Development", *Journal of Political Economy*, Vol. 101, No. 2, pp. 274-298.

Banerjee, Abhijit, (2001): "Contracting Constraints, Credit Markets and Economic Development" mimeo, MIT.

Bardhan, Ronita, Kiyo Kurisu-Hasegawa and Keisuke Hanaki (2011): "Linking Urban Form and Quality of Life in Kolkata, India", paper presented at the 47th ISOCARP (International Society of City and Regional Planners) Congress, held at Wuhan, China, on 24-28 October.

Barnes, Douglas F. and Willem M. Floor (1996): "Rural Energy in Developing Countries: A Challenge for Economic Development", *Annual Review of Energy and the Environment*, Vol. 21, pp. 497-530.

Bencivenga, Valerie and Bruce D. Smith, (1991): "Financial Intermediation and Endogenous Growth" *Review of Economic Studies*, Vol. 58, No. 2, pp. 195-209.

Bendavid-Val, A. (1991): *Rural Area Development Planning: Principles, Approaches and Tools of Economic Analysis*, Vol. 1, Food and Agriculture Organisation (FAO) of the United Nations.

Bhagat, R.B. (2004): "Dynamics of Urban Population Growth by Size Class of Towns and Cities in India", *Demography India*, Vol. 33, No. 1, pp. 47-60.

Bhalla, Sheila. 1997. "The Rise and Fall of Workforce Diversification Processes in Rural India: A Regional and Sectoral Analysis." Centre for Economic Studies and Planning, *DSA Working Paper*. New Delhi, Jawaharlal Nehru University.

Bhowmik, S.K. (undated): "Hawkers and the Urban Informal Sector: A Study of Street Vending in Seven Cities", A report prepared for the National Alliance of Street Vendors of India (NASVI), New Delhi.

Biswas, S. (1999): Kolkatay Hawker Uchheder Prasangikata ebang Uchheder Prabhab (in Bengali; translation: Relevance and Impact of Hawker Eviction in Kolkata), unpublished MA Dissertation (Calcutta: University of Calcutta, Department of Political Science).

Bloom, Gerald (2001): "China's Rural Health System in Transition: Towards Coherent Institutional Arrangements", paper presented at the Conference on Financial Sector Reform in China, held at the Kennedy School of Government, Harvard Business School on 11-13 September 2001.

Boateng, Nana Asantewaa (2011): *Promoting Rural Enterprise Growth and Development: Lessons from Four Projects in Sub-Saharan Africa*, Rome: International Fund for Agricultural Development.

Bose, Deb Kumar (1984), "Unemployment in West Bengal", *Social Scientist.*

Burgess, Robin and Rohini Pande (2003): "Do Rural Banks Matter? Evidence from the Indian Social Banking Experiment", *Discussion Paper No. DEDPS/40*, London: Suntory and Toyota International Centres for Economics and Related Disciplines, London School of Economics and Political Science.

Cecelski, Elizabeth (with Sandra Glatt) (1982): "The Role of Rural Electrification in Development", Discussion Paper D-73E (Energy in Developing Countries Series), unpublished material, Washington DC: Centre for Energy Policy Research.

Chadha, G.K. (2003): Rural Nonfarm Sector in the Indian Economy: Growth, Challenges and Future Direction. Mimeo. Washington, D.C.: International Food Policy Research Institute.

Chakravarty, S. (1987): *Development Planning: The Indian Experience*, Oxford: Clarendon Press.

Champion, T (2001): Urbanisation, sub-Urbanisation, counter-Urbanisation and re-Urbanisation. PP. 143-161 in Paddison, R. (ed.): Handbook of Urban Studies, London, Sage.

Chapman, G. and S. Wanmali (1981): 'Urban-Rural Relationships in India: A Macro-Scale Approach Using Population Potentials', *Geoforum*, Vol. 12, No 1, pp 19-43.

Chen, Xiangming, Lan Wang, and Ratoola Kundu (2009): "Localizing the Production of Global Cities: A Comparison of New Town Developments around Shanghai and Kolkata"; City 7 Community, Vol. 8, pp. 433-463.

Clout, H.D. (1972), *Rural Geography*, Pergamon, Oxford.

CURS- Centre for Urban and Regional Studies (2005): ESPON 1.1.2, Urban-rural relationship in Europe, Final report, Luxembourg.

Das, K. (2006): "Electricity and Rural Development Linkage", *GIDR Working Paper Number 172*; Ahmedabad: Gujarat Institute of Development Research (GIDR).

Dasgupta, Biplab (1988): "Migration and Urbanisation: Issues Relating to West Bengal". In Urbanisation, Migration and Rural Change: A Study of West Bengal, ed. Biplab Dasgupta, Kolkata: A Mukherjee & Co. Pvt. Ltd.

Davis, Junior (2006): Rural Non-farm Livelihoods in Transition Economies: Emerging Issues and Policies, *Journal of Agricultural and Development Economics*, Vol. 3, No. 2, pp. 180-224.

Doeksen, Gerald A., Tom Johnson, Chuck Willoughby (1997): "Measuring the Economic Importance of the Health Sector on a Local Economy: A Brief Literature Review and Procedures to Measure Local Impacts," *SRDC Number 202*, Mississippi: The Southern Rural Development Center (SRDC), Mississippi State University.

Dutta, S. (2002): "Urbanisation and Development of Rural Small Enterprises: Studying the Linkage with Focus on West Bengal", *Economic and Political Weekly*, Vol. 37, No. 30, pp. 3181-9.

Friedmann, J. and Douglass, M. (1978), "Agropolitan development: towards a new pattern of regional development in Asia", *Growth Pole Strategy and Regional Development,* Oxford.

Funnell, D.C (1988), "Urban-Rural Linkages: Research Themes and Directions", *Human Geography.*

Gerschenkron, Alexander (1962): *Economic Backwardness in Historical Perspective*; Cambridge: Harvard University Press.

Government of West Bengal (2007): District Human Development Report Bankura; Kolkata: Development and Planning Department, Government of West Bengal.

Greenwood, J. and B. Jovanovic, (1990): "Financial Development, Growth and the Distribution of Income", *Journal of Political Economy*, Vol. 98, No.5, pp. 1076-1107.

Grigg, D. (1983), "Agricultural geography", *Progress in Human Geography.*

Haggblade, S., P.B.R. Hazell, P.A. Dorosh (2007): "Sectoral Growth Linkages between Agriculture and the Rural Non-farm Economy." In *Transforming the Rural Non-farm Economy: Opportunities and Threats in the Developing World*, eds. S. Haggblade, P.B.R. Hazell, T. Reardon, pp. 141-182, New Delhi: Oxford University Press.

Hamer, A.M. (1985): "Decentralised Urban Development and Industrial Location Behaviour in São Paulo, Brazil: A Synthesis of Research Issues and Conclusions", *World Bank Staff Working Papers Number 732*, Washington: The World Bank.

Harris, John (1993), "What is happening in Rural West Bengal? Agrarian Reform, Growth and Distribution", *Economic and Political Weekly".*

Hazell, P. B. R., S. Haggblade, and T. Reardon (2007): "Structural Transformation of the Rural Non-farm Economy". In *Transforming the Rural Non-farm Economy: Opportunities and Threats in the Developing World*, eds. S. Haggblade P. B. R. Hazell and T. Reardon, pp. 83-98. New Delhi: Oxford University Press.

Helgession, L. (2006): Getting Ready for Life. Life Strategies of Town Youth in Mozambique and Tanzania. Doctoral Thesis, University of Umea, Sweden.

Hite, J. (1998), "Land Use Conflicts on the Urban Fringe: Causes and Potential Resolution", Clemson, SC (Strom Thurmond Institute, Clemson University). URL (cited on 27 November 2008): http://www.strom.clemson.edu/publications/hite/landuse-hite.pdf.

IFAD (undated): "Rural Enterprises and Poverty Reduction", *Discussion Paper*, Governing Council – 27th Session; Rome: Asia and Pacific Division, International Fund for Agricultural Development (IFAD).

Islam, Nurul (1997): "The Non-farm Sector and Rural Development: Review of Issues and Evidence", *2020 Briefs No. 47*, Washington D.C.: International Food Policy Research Institute.

Jacoby, E. H. (1971), *Man and Land*, Andre Deutsch, London.

Jain, Sures Chandra (2005): *Education and Socio-economic Development*, New Delhi: Concept Publishing Company.

Jha, Brajesh (2006) "Rural Non-Farm Employment in India: Macro-trends, Micro-evidences and Policy Options", *IEG Working Paper Series No. E/272/2006*. New Delhi: Institute of Economic Growth.

Johnston, R.J. (2000): 'Urbanisation', Pp. 883.884 in Johnston R. J., Gregory, D., Pratt, G. & Watts, M. (eds.): The Dictionary of human geography. Cornwall: Blackwell Publishers.

Kalra, Prem K., Rajiv Shekhar, and Vinod K. Shrivastava (2007): "Electrification and Bio-energy Options in Rural India". In *India Infrastructure Report 2007*, (eds.) Prem Kalra & Anupam Rastogi, New Delhi: Oxford University Press.

Kant, Amitabh (2012): "The Heart of the Matter", *The Times of India*, 29 June, p. 12.

Krishna, Srivatsa (2012): "Rural BPOs Promise a Revolution in Small Towns", *The Times of India*, 1 July.

Kundu, A and L.R Saraswati (2012): Migration and Exclusionary Urbanisation in India, *Economic and Political Weekly*, Vol. XLVII Nos. 26&27, June 32-July7,Pp-219-227.

Kundu, Nitai (2003): "The Case of Kolkata". Published as a chapter in a report titled "Understanding Slums: Case Studies for the Global Report on Human Settlements".

Lewis, W. A., 1954, "Economic Development with Unlimited Supplies of Labour", *The Manchester School*, Vol. 22, pp.139-191.

Liedholm, C. (2007): "Enterprise Dynamics in the Rural Non-farm Economy". In *Transforming the Rural Non-farm Economy: Opportunities and Threats in the Developing World*, ed. S. Haggblade P. B. R. Hazell and T. Reardon, pp. 99-114. New Delhi: Oxford University Press.

Lucas R. (1993): "Making a Miracle". *Econometrica*, Vol. 61, No. 2, pp. 251–72.

Marjit, S., Kar, S. and Maiti, D.S (2007), *Labor Market Reform and Poverty – The Role of Informal Sector*, Centre for Studies in Social Sciences.

Meliczek, H. (1973), *The Work of FAO and Experiences in land Consolidation, Land Reform, Land Settlement and Cooperatives*.

Mellor, J. W. and U.J. Lele (1973): "Growth Linkages of the New Food-grain Technologies", *Indian Journal of Agricultural Economics*, Vol. 18, No. 1, pp. 35-55.

Mellor, J.W. (ed.) (1995): Agriculture on the Road to Industrialisation Baltimore and London: The Johns Hopkins University Press.

Mills, E.S and Becker, C.M (1986), *Studies in Indian Urban Development*, Oxford University Press, New York.

Moore, W.E. (1972), *Economic Demography of Eastern and Southern Europe*, Arno Press, New York.

Mukherjee, A., and X. Zhang (2007): "Rural Industrialisation in China and India: Role of policies and institutions", *World Development*, Vol. 35, No. 10, pp. 1621-34.

Munankami, Ramesh B., Sacendoncillo, Marivel Camilon and Sarosa, Wicaksono (2005), *Rural-Urban Linkages for Poverty Reduction: A Review of selected approaches from Asia and the Pacific*, United Nations.

Nordregio (2005): ESPON 1.1.1, Potential for polycentric development in Europe, Final report, Luxembourg.

OECD (1979): Agriculture in the Planning and Management of Peri-urban Areas. Volume 1: Synthesis.

Otsuka, Keijiro. 2007. "The Rural Industrial Transition in East Asia: Influences and Implications." In Haggblade, Hazell and Reardon, eds., *Transforming the Rural Nonfarm Economy*. Baltimore: Johns Hopkins University Press.

Papola, T.S. and V.N. Misra (1980): "Some Aspects of Rural Industrialisation *Economic and Political Weekly*, Vol. 15, Nos. 41-43, pp. 1733-46.

Perry, Charles S., (1984), "Economic Activity and Social Indicators: A Rural-Urban Discontinuum?" *American Journal of Economics and Sociology.*

Pina-Cabral, J. de (1986), *Sons of Adam, Daughters of Eve: The Peasant Worldview of the Alto Minho*, Clarendon Press, Oxford.

Planning Commission (2000): *Report of the Taskforce on Employment Opportunities*; New Delhi: Government of India.

Preston, D. A. (1975): "Rural-urban and inter-settlement interaction: Theory and Structure", *Area*, Vol. 7, No. 1, pp. 171-174.

Ra , Young-Sun and Kyung Woo Shim (2009): "The Korean Case Study: Past Experience and New Trends in Training Policies", *S.P. Discussion Paper Number 931*, Washington: Social Protection (SP) and Labour, World Bank.

Reardon, T., E. Crawford, and V. Kelly (1994): "Links between Non-farm Income and Farm Investment in African Households: Adding the Capital Perspectives", *American Journal of Agricultural Economics*, Vol. 76, No. 5, pp. 1172-6.

Robert, Redfield (1930): "Tepoztlan, A Mexican Village: A study in folk life Chicago", University of Chicago Press.

Robinson, G.M. (1990): Conflict and change in the countryside. Rural Society, Economy and Planning in the Developed World. London: Belhaven Press.

Rondinelli, D. and Ruddle, K. (1978), *Urbanisation and rural development: A spatial policy for equitable growth*, New York, Preger.

Rutten, M. (1995): *Farms and Factories: Social Profile of Large Farmers and Rural Industrialists in West India*; Delhi: Oxford University Press.

Saith, A. (1992): *The Rural Non-Farm Economy: Processes and Policies*, Geneva: International Labour Office.

Samanta, B.B. and A.K. Sundaram (1983): "Socio-economic Impact of Rural Electrification in India", Discussion Paper No. D-730 (Energy in Developing Countries Series), unpublished material, Washington DC: Centre for Energy Policy Research.

Sassen, Saskia (2005): The Global City: Introducing a Concept; *Brown Journal of World Affairs*; Vol. 11, No. 2, pp. 27-43.

Sau, Sachinandan (undated): *Database for Planning and Development in West Bengal* (Volume I: Districts of West Bengal); Midnapore: Vidyasagar University (faculty publication).

Schumacher, E.F. (1973): *Small is Beautiful: A Study of Economics as if People Mattered*; London: Blond & Briggs Ltd.

Schumpeter, Joseph (1934): *The Theory of Economic Development: An Inquiry into Profits, Capital, Interest, and the Business Cycle*; Cambridge: Harvard University Press.

Sen, Ratna (2009), "The Evolution of Industrial Relations in West Bengal", International Labour Organisation.

Sengupta, S., and H. Gazdar (1996): Agrarian Politics and Rural Development in West Bengal. In Indian Development: Selected Regional Perspectives, ed. J. Dreze and A. Sen, pp. 129-204. New Delhi: OUP.

Sethuraman, S. V. (1992) *Urban Informal Sector in Asia – An Annotated Bibliography*, International Labor Office, Geneva.

Shalti Research Group (2008): *Big Capital in Organised Retail: A Study on Its Impact in West Bengal*, South 24-Parganas: Seribaan.

Smith, C. T. (1978), *An Historical Geography of Western Europe Before 1800*, Longman Press, New York.

Tacoli, Cecilia (1998), "Rural-Urban Interactions: A guide to the literature", *Environment and Urbanisation.*

Tacoli, Cecilia (2004), "Rural-Urban Linkages and Pro-poor agricultural growth".

Tacoli, Cecilia and Satterthwaite, David. 2003. "The Urban Part of Rural Development: The Role of Small and Intermdeiate Urban Centres in Rural and Regional Development and Poverty Reduction." R*ural-Urban Interactions and Livelihood Strategies Working Paper 9*. London: International Institute for Environment and Development.

Tacoli, Cecilia. 1998. "Rural-Urban Interactions: A Guide to the Literature", *Environment and Urbanisation*, Vol. 10, No. 1, pp. 147-166.

Tewari, R.T., Rachna Mujoo, Brijesh Tewari (2005): *Social Capability and Rural Industrialisation* New Delhi: APH Publishing Corporation.

Todaro, M.P. (1980): "Internal Migration in Developing Countries: A Survey". In *Population and Economic Change in Developing Countries*, ed. R. A. Easterlin, 361-402. London: University of Chicago Press.

Ulied, Andreu, Biosca, Oriol and Rodrig, Rafael (2010), "Urban and Rural Narratives and Spatial Development Trends in Europe", Ministry of Environment, and Rural and Marine Affairs, Spain.

UN-Habitat (2007) *Enhancing Urban Safety and Security: Global Report on Human Settlements 2007*, Earthscan, London

UNDP (2000): *World Energy Assessment: Energy and the Challenge of Sustainability*. New York: United Nations Development Program.

UNDP, Government of the Netherlands, ILO and UNIDO (1988): *Development of Rural Small Industrial Enterprise: Lessons from Experience*, Vienna: UNIDO.

Yeh, Anthony G.O., Jiang Xu, and Kaizhi Liu (2011): "China's Post-reform Urbanisation: Retrospect, Policies and Trends", *Urbanisation and Emerging Population Issues – 5*; London: International Institute for Environment and Development (IIED); and New York: United Nations Population Fund (UNFPA).

Zhu, Xiwei and Huasheng Song (2007): "Industrialisation Labor Mobility and Urban-Rural Structure", mimeo, Zhejiang University, China.

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